# Steady and Periodic Pressure Measurements on a Generic Helicopter Fuselage Model in the Presence of a Rotor

Raymond E. Mineck and Susan Althoff Gorton
Langley Research Center, Hampton, Virginia

The NASA STI Program Office . . . in Profile

Since its founding, NASA has been dedicated to the advancement of aeronautics and space science. The NASA Scientific and Technical Information (STI) Program Office plays a key part in helping NASA maintain this important role.

The NASA STI Program Office is operated by Langley Research Center, the lead center for NASA's scientific and technical information. The NASA STI Program Office provides access to the NASA STI Database, the largest collection of aeronautical and space science STI in the world. The Program Office is also NASA's institutional mechanism for disseminating the results of its research and development activities. These results are published by NASA in the NASA STI Report Series, which includes the following report types:

- TECHNICAL PUBLICATION. Reports of completed research or a major significant phase of research that present the results of NASA programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA counterpart of peer-reviewed formal professional papers, but having less stringent limitations on manuscript length and extent of graphic presentations.

- TECHNICAL MEMORANDUM. Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.

- CONTRACTOR REPORT. Scientific and technical findings by NASA-sponsored contractors and grantees.

- CONFERENCE PUBLICATION. Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or co-sponsored by NASA.

- SPECIAL PUBLICATION. Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.

- TECHNICAL TRANSLATION. English-language translations of foreign scientific and technical material pertinent to NASA's mission.

Specialized services that complement the STI Program Office's diverse offerings include creating custom thesauri, building customized databases, organizing and publishing research results . . . even providing videos.

For more information about the NASA STI Program Office, see the following:

- Access the NASA STI Program Home Page at *http://www.sti.nasa.gov*

- Email your question via the Internet to help@sti.nasa.gov

- Fax your question to the NASA STI Help Desk at (301) 621-0134

- Telephone the NASA STI Help Desk at (301) 621-0390

- Write to:
  NASA STI Help Desk
  NASA Center for AeroSpace Information
  7121 Standard Drive
  Hanover, MD 21076-1320

NASA/TM-2000-210286

Steady and Periodic Pressure Measurements on a Generic Helicopter Fuselage Model in the Presence of a Rotor

Raymond E. Mineck and Susan Althoff Gorton
Langley Research Center, Hampton, Virginia

June 2000

Abstract

A wind tunnel test of a generic helicopter fuselage model with an independently mounted rotor has been conducted to obtain steady and periodic pressure data on the helicopter body. The model was tested at four advance ratios and three thrust coefficients. The periodic unsteady pressure coefficients are marked by four peaks associated with the passage of the four rotor blades. Blade passage effects are largest on the nose and tail boom of the model. The magnitude of the pulse increases with rotor thrust coefficient. Tabular listings of the unsteady pressure data are included to permit independent analysis.

Introduction

Helicopter airframes are subjected to periodic airloads due principally to the rotating main rotor blades. The periodic airloads impact the noise and vibration within the passenger cabin as well as the fatigue life of the airframe. Computational techniques have been and are being developed to predict these periodic airframe airloads. Periodic pressure measurements are needed on simple configurations for validation of the computational techniques. Few experimental data sets are available in the open literature. Available results are typically limited to a few measurement stations and test conditions. (See, for example, references 1 to 5).

The purpose of this investigation is to obtain steady and periodic pressure distributions on a generic helicopter configuration suitable for CFD validation studies. Test data were obtained at three nominal rotor thrust coefficients (0.040, 0.064, and 0.080) at four nominal advance ratios (0.01, 0.05, 0.15, and 0.23).

Symbols

A rotor disk area, πR^2, 25.04 ft^2

A_1 rotor lateral cyclic pitch, deg

B_1 rotor longitudinal cyclic pitch, deg

C_A modified body axial-force coefficient, $F_A/q_t A$

C_l modified body rolling-moment coefficient, $M_X/q_t AR$

C_m modified body pitching-moment coefficient, $M_Y/q_t AR$

C_N modified body normal-force coefficient, $F_N/q_t A$

C_n modified body yawing-moment coefficient, $M_Z/q_t AR$

C_T/σ rotor thrust coefficient, $T/\rho_\infty A V_t^2 \sigma$

C_P modified pressure coefficient, $(p-p_\infty)/q_t$

C_Q/σ rotor torque coefficient, $Q/\rho_\infty A V_t^2 R \sigma$

C_Y modified body side-force coefficient, $F_Y/q_t A$

$C_1, C_2, ..., C_8$ coefficients used in the analytical definition of the ROBIN body (See Appendix)

F_A body axial force, lbf

F_N body normal force, lbf

F_Y body side force, lbf

H function used for analytical definition of the ROBIN body. (See Appendix)

l fuselage reference length (one half the design body length), 39.35 in.

M_X body rolling moment, in-lbf

M_Y body pitching moment, in-lbf

M_Z body yawing moment, in-lbf

N function used for analytical definition of the ROBIN body. (See Appendix)

p local static pressure, psf

p_∞	free stream static pressure, psf
Q	rotor shaft torque, in-lbf
q_t	modified rotor tip dynamic pressure, $\rho_\infty V_t^2$, psf
R	rotor radius, 2.823 ft
r	radial polar coordinate used for analytical definition of the ROBIN body. (See Appendix)
S	model planform reference area, 3.708 ft^2
T	rotor thrust, lbf
X,Y,Z	model system of axes (see figure 5)
x,y,z	distances in the three coordinate directions, ft
V_∞	free stream velocity, ft/sec
V_t	tip speed due to rotation, ΩR, (~591 ft/sec)
W	function used for analytical definition of the ROBIN body. (See Appendix)
Z_0	function used for analytical definition of the ROBIN body. (See Appendix)
α_s	rotor shaft angle of attack (positive leading edge up), deg
θ	rotor collective pitch measured at 0.75R, deg
μ	advance ratio, V_∞/V_t
ρ_∞	free stream density, slugs/ft^3
σ	rotor solidity, 0.098
φ	angular polar coordinate used for analytical definition of the ROBIN body. (See Appendix)
ψ	reference blade azimuthal position, deg
Ω	rotor rotational speed, rad/sec

Wind Tunnel

The test program was conducted in the Langley 14- by 22-Foot Subsonic Tunnel. A detailed description of the tunnel is presented in reference 6. The tunnel is a closed-circuit, atmospheric tunnel designed for low speed testing of powered and high-lift configurations. The test section can be configured in several ways: fully closed, slotted, partially open, or fully open. The 9:1 contraction ratio, flow straightening honeycomb, and four turbulence reduction screens promote good flow quality in the test section. The test section measures 21.75 feet wide and 14.5 feet high at the entrance and is 50 feet long. The test section floor is divided into two bays, a forward bay and a rear bay.

The tests reported herein used a partially open test section configuration with the sidewalls raised out of the flow, the floor and ceiling in their normal positions, and the flow collector sidewalls positioned at the end of the test section. The model was installed in the forward bay of the test section.

Model

The wind tunnel model consisted of a four-bladed rotor and drive system mounted from the ceiling and a body independently mounted from the floor on a post. Photographs of the model installed in the test section are presented in figure 1.

The Isolated Rotor Test System (IRTS) was used to power the rotor. The IRTS consists of a drive motor, balance, and controls for a single rotor. A sketch of the IRTS (with the controls removed for clarity) is presented in figure 2. The components are stacked in a linear fashion to provide minimal obstruction to the flow into and out of the rotor disk. The IRTS is mounted to the non-flow side of the test section ceiling. The base supports an arc sector to vary the angle of attack of the entire drive system (including the rotor shaft) while maintaining the center of the rotor on (or near) the centerline of the test section. A 67 hp electric motor is attached to the arc sector. Power from the motor is transmitted to the drive shaft by way of two drive belts. A 36 channel slip ring is installed at the base of the shaft to transfer electrical signals from the rotating to the non-rotating system. The hollow drive shaft is supported within a stepped cylinder that forms the external surface of the IRTS. The drive shaft

passes through the rotor balance. Electric actuators control a swashplate for rotor collective and cyclic pitch. The end of the drive shaft is designed to accept hubs from the 2-meter rotor test system described in reference 7. This test used the four-blade, fully articulated hub described in detail in reference 7. The flapping and lag hinges are coincident at the 2.00 in. radial station. There was no significant pitch-flap coupling. The rotor blades used in this test had a rectangular planform with a chord of 2.61 inches, a rotor radius of 33.88 inches, and a linear twist of -8°. The root cutout was at 24 percent of the radius.

The ROBIN (ROtor Body INteraction) configuration, representative of a generic helicopter, was used for the airframe model. This configuration has been used in several previous wind tunnel investigations. (See, for example, references 8 and 9). The shape consists of an analytically defined body representing the fuselage and an analytically defined pylon representing the fairing around the engines and transmission. A summary of the equations and the associated coefficients used to define the coordinates for this model are presented in the Appendix. This analytical definition generates model coordinates nondimensionalized by a reference length equal to one half of the design body length. For the body tested in this investigation, the design body length was 78.70 inches. During fabrication, the body was truncated at $x = 78.57$ inches, thereby forming a blunt trailing edge. Sketches of the model are presented in figure 3. The center of the rotor hub was located $x/l = 0.696$, $y/l = 0.051$, and $z/l = 0.322$.

Instrumentation

Rotor forces and moments were measured with a strain gauge balance installed in the IRTS. The rotor balance measured the force in each of the three coordinate directions and the pitching and rolling moments about the center of the rotor hub. Rotor torque was measured with two redundant strain gauges on the rotor shaft. Full scale loads and estimated accuracies are presented in table 1. The configuration of the IRTS tested herein had significant interactions between the balance axial and side force loads and the shaft torque. This decreased the accuracy of the side force and axial force measurements significantly, as noted in table 1. Rotor shaft angle was measured using an accelerometer with an accuracy ±0.01°. Actuator extension for the

rotor controls was measured using a redundant system of linear variable displacement transducers (LVDTs) and encoders and the outputs were resolved into rotor collective pitch, longitudinal cyclic pitch, and lateral cyclic pitch. Assumed accuracies of the control positions are ±0.5°, based on the hysteresis of the calibrations at the maximum angles (worst case). Hall effect devices were installed on the flapping and lagging hinges to measure the motion of the reference blade. Rotor rotational speed and reference blade azimuthal position were measured using optical encoders. For the 0° position, the reference blade was located over the tail of the model, aligned with the model X-axis. Estimated accuracy of the azimuthal position of the reference blade is ±2°.

Model fuselage forces and moments were measured with a six-component, strain gauge balance. Full scale loads and estimated accuracies are listed in table 1. Fuselage angle of attack was measured with an accelerometer with an accuracy ±0.01° mounted within the model.

Static pressure orifices were installed around the body at four longitudinal stations to measure the steady surface static pressures. A sketch of the orifice layout is presented in figure 4. Nominal orifice locations are listed in table 2. The orifice diameter was 0.03 inches. These pressures were measured using an electronically scanned pressure (ESP) measurement system. The full scale range of each ESP module was ±1 psid and manufacturer's quoted accuracy was ±0.1 percent of full scale.

Pressure orifices were installed along the top of the body and around the body at one station to measure the unsteady surface static pressures. A sketch of the orifice locations is presented in figure 4 and a list is presented in table 3. The orifices on the top of the body were displaced about 0.25 inches to the starboard of the model centerline ($y = 0.25$ in.) to avoid interference with the mechanical connection of the port and starboard halves of the body. The pressure orifice diameter was 0.10 inches. The unsteady pressures were measured with transducers with a full scale range of ±2 psid, a manufacturer's quoted accuracy of ±0.03 psid, and a frequency response of 70,000 hz.

The tunnel stagnation pressure, tunnel free stream dynamic pressure, and the reference pressure for the

model pressure transducers were measured with quartz bourdon tube pressure transducers. (See reference 6).

Tests and Procedures

Manufacturing and assembly problems with the model mounting hardware led to a misalignment between the model fuselage and the rotor as well as a misalignment between the model longitudinal axis with the balance. As a result, the center of the rotor shaft was 2 inches to the starboard of the model symmetry plane of the model body (figure 3) and the model body was yawed with the nose left about 1.2°.

Rotor balance and fuselage balance data were corrected for balance interactions. Fuselage balance force and moment data were corrected for the 1.2° misalignment between the model axis and the balance axis. No corrections were made for test section flow angularity or to the dynamic pressure for test section wall interference. The corrections were calculated and found to be negligible.

Rotor rotation was counter-clockwise when viewed from above the model. For this test, the nominal rotor speed was 2000 rpm. This rotational speed was selected to avoid a resonance between 2050 and 2200 rpm. Thus, the hover tip speed was about 591 ft/sec. Since the objective of this test is to obtain periodic pressure measurements on the airframe and not rotor performance, the effect of the reduced tip speed should not have a significant impact on the test results.

Tests were conducted at four nominal advance ratios: 0.01 (hover), 0.05, 0.15, and 0.23 and at three nominal values of C_T/σ: 0.040, 0.064, and 0.080. The first harmonic of the rotor flapping was set to 0 via the rotor controls by the model pilot. All data were acquired at a body angle of attack of 0°. The rotor shaft angle was set to 0° for advance ratios of 0.01 and 0.05 and to -3° for advance ratios of 0.15 and 0.23. These forward flight test conditions were selected to match the test conditions used in references 9 to 11. At each test condition, rotor thrust and torque, rotor control positions, model forces and moments, steady and unsteady surface pressures, and the wind tunnel test conditions were measured.

The rotor wake influences the flow about the body, impacting the body forces and moments. At low advance ratios, the flow about the body is dominated by the rotor wake, not by the free stream. Thus, traditional nondimensionalization of the force and moment coefficients yields uncharacteristically large values. Also, at hover (zero dynamic pressure), these traditional coefficients are undefined. Therefore, modified coefficients using the rotor tip speed due to rotation and the rotor disk area are used in this report. (A similar method of nondimensionalization is also used in references 2 to 4). The modified coefficients can be converted back to conventional coefficients by multiplying by $2A/(\mu^2 S)$ for the forces and $2AR/(\mu^2 Sl)$ for the moments as follows:

$$C_a \times \frac{2A}{\mu^2 S} = \frac{F_a}{\frac{1}{2}\rho_\infty V_t^2 \frac{V_\infty^2}{V_t^2} S} = \frac{F_a}{\frac{1}{2}\rho_\infty V_\infty^2 S}$$

where "a" represents one of the three components of the force (N, A, or Y), and

$$C_b \times \frac{2AR}{\mu^2 Sl} = \frac{M_c}{\frac{1}{2}\rho_\infty V_t^2 \frac{V_\infty^2}{V_t^2} Sl} = \frac{M_c}{\frac{1}{2}\rho_\infty V_\infty^2 Sl}$$

where "c" represents one of the three components of the moment (X, Y, or Z) and "b" represents the corresponding coefficient (l, m, or n). The positive directions for the force and moment coefficients are presented in figure 5.

Readings from the unsteady pressure transducers were recorded at 256 azimuth locations per rotor revolution for 30 revolutions. The readings were converted to engineering units and the 30 results at each azimuth location were averaged. These averaged results at each azimuth location are used in this report. The pressure coefficients are nondimensionalized by the modified rotor tip dynamic pressure for the same reasons used for the model forces and moments. The modified coefficients can be converted back to traditional coefficients by multiplying by $2/\mu^2$ as follows:

$$C_p \times \frac{2}{\mu^2} = \frac{p - p_\infty}{\frac{1}{2}\rho_\infty V_t^2 \frac{V_\infty^2}{V_t^2}} = \frac{p - p_\infty}{\frac{1}{2}\rho_\infty V_\infty^2}$$

Results and Discussion

Rotor test conditions at the four advance ratios are presented in figure 6. Rotor performance is typical with thrust increasing with collective pitch and torque increasing with thrust. To maintain the tip path plane perpendicular to the rotor shaft, the longitudinal cyclic pitch increases with increasing advance ratio. The lateral cyclic pitch becomes more negative as the advance ratio increases up to 0.15 and then becomes less negative. This is the typical control pattern for this model as the forward speed increases from hover, through transition, to cruise.

The variation with rotor thrust coefficient of the force and moment coefficients on the body is presented in figure 7. As expected, download (negative normal-force coefficient) on the body increases with increasing rotor thrust and decreases with increasing advance ratio (and free stream dynamic pressure). The positive axial-force coefficient increases as the skin friction and pressure drag increases with dynamic pressure associated with the free stream and the aft-directed rotor wake. The effects of increasing advance ratio on the pitching moment and yawing moment are mixed, in part due to the change in shaft angle. Effects on the rolling-moment and side-force coefficients were within the balance accuracy.

Steady pressures were measured on the model surface at four longitudinal stations. As was done for the body force and moment coefficients, the steady static pressures were nondimensionalized by the modified tip dynamic pressure. The results are presented in figure 8 and in table 4 at three thrust coefficients for each advance ratio. The top portion of each column in the table lists the test conditions. The bottom portion lists the modified pressure coefficient (multiplied by 100) for each orifice listed. The location of each orifice can be obtained from table 2. The pressure distributions on the sides of the model are not symmetrical. Near hover, this is attributable to the swirl in the wake as the positive pressures occur on the sides where the blades advance toward the body (starboard side of the nose and port side of the tail). For forward flight, the rotor loading becomes asymmetrical leading to different induced effects on each side of the model. Near hover ($\mu = 0.01$), the wake is directed downward, inducing pressures above ambient on the top of the body and pressures below ambient on the sides of the

body (for stations within the wake, $x/l \leq 1.35$). Wake induced pressures are largest beneath the rotor and smallest outside the wake region ($x/l = 1.54$). At the low advance ratio ($\mu = 0.05$), the calculated wake is deflected back at about a 45° angle, covering all four rings of pressure orifices. Wake induced effects are largest at the two rearmost rings of orifices. At the higher advance ratios ($\mu = 0.15$ and $\mu = 0.23$), calculations indicate that the wake is blown back by the free stream and does not impinge on the body. Thus, the rotor induced effect is small as shown by the small effect of thrust coefficient on the pressure coefficient for a given orifice location.

Unsteady pressures were measured on the upper surface of the model just to the starboard of the centerline and on a ring at one model station ($x/l = 0.89$). The unsteady pressures were nondimensionalized by the modified rotor tip dynamic pressure. A tabular listing of the modified pressure coefficient at each azimuthal location is presented in tables 5 to 28. The leftmost column is the azimuth location. The rest of the columns list the modified pressure coefficient for the orifice listed at the top of the column. See table 4 for the orifice locations. Note that in these tables the modified pressure coefficient values have been multiplied by 100 to improve the readability of the tables. The following chart lists the table number associated with each combination of advance ratio and thrust coefficient for the row of orifices near the top of the model and on the ring around the model at $x/l = 0.89$.

		Table Number	
μ	C_T/σ	Top row	Ring x/l=.89
.01	.040	5	6
.01	.064	7	8
.01	.080	9	10
.05	.040	11	12
.05	.064	13	14
.05	.080	15	16
.15	.040	17	18
.15	.064	19	20
.15	.080	21	22
.23	.040	23	24
.23	.064	25	26
.23	.080	27	28

The unsteady pressure coefficient data at each orifice location were numerically integrated over one rotor revolution to obtain the steady pressure coefficient at that location. These numerically integrated results on the top surface of the body are presented in figure 9 along with the steady pressure coefficients. Note that there are two data points at each station for the ESP measurements for the two orifices on either side of the model centerline. For the three similar locations on the tail boom, the averaged unsteady pressure coefficients are in reasonable agreement with steady pressure coefficients. On the top of the nose and tail boom, the pressure coefficients are generally positive and increase with thrust coefficient. Pressure coefficients on the top of the pylon are smaller than on the nose or tail boom, becoming negative at the higher advance ratios where the effect of the free stream predominates. The effect of thrust coefficient on these pylon pressures is relatively small since the these locations are within the blade root cutout where the local disk loading is smaller.

The averaged unsteady pressure coefficients around the body at $x/l = 0.89$ are presented in figure 10. This location is within the root cutout of the rotor blades so that the effects of rotor thrust are small compared to locations on the nose or the tail. For this station, the pressure coefficients on the starboard side of the model are generally less that those on the port side.

The variation of the unsteady pressure coefficient with the azimuthal location of the reference blade is presented in figure 11 for the orifices on the top of the model and in figure 12 for the orifices on the ring at $x/l = 0.89$. (See tables 5 to 28 for a tabular listing). Note that the results from the two orifices near the bottom corner of the body ($z/l = -0.12$) at $x/l = 0.89$ did not show a significant variation with azimuthal location and were omitted from the plots. The results generally show four pressure pulses per revolution, corresponding to the passage of each of the four blades above the orifice. There are minor differences in the shapes of the four pulses because of small differences in the aerodynamics of each blade. Orifices on the upper surface of the nose and the tail boom show more distinct pulses. The orifices within the root cutout (x/l from 0.46 to 0.94) show smaller pressure pulses because of the reduced disk loading there. The magnitude of the pulse increases with increasing thrust coefficient. The lag between the blade passage and the

peak pressure coefficient is about 35° on the nose and about 28° on the tail boom.

Surface flow visualization studies were included in this investigation. A mixture of mineral oil and talcum powder was applied to the model. The model and tunnel were then set to the desired test conditions and the mixture allowed time to follow the flow over the model surface. The tunnel and rotor were stopped and the flow pattern was photographed. Photographs were obtained at a thrust coefficient on 0.0064 at advance ratios of 0.05, 0.15, and 0.23. The photographs are presented in figures 13 to 15. At the lowest advance ratio, the streaklines are generally directed downward on the side of the model. At the two higher advance ratios, the streaklines are generally directed downstream.

Concluding Remarks

A wind tunnel investigation has been conducted to obtain steady and periodic pressure measurements on a model helicopter fuselage. The test results indicate that:

(1) The rotor wake induces changes in the steady pressure coefficients at the two lowest advance ratios ($\mu = 0.01$ and $\mu = 0.05$) as the wake flows around the body. The rotor wake induces only small changes at the two higher advance ratios ($\mu = 0.15$ and $\mu = 0.23$) as the wake flows above the body.

(2) The unsteady pressure coefficients are marked by four peaks associated with the passage of the four rotor blades. Blade passage effects are largest on the nose and tail boom of the model. The magnitude of the pulse increases with rotor thrust coefficient.

Appendix - Definition of the ROBIN Body

The coordinates of the ROBIN body are defined by super-ellipse equations. For a given non-dimensional body longitudinal station (x/l), the nondimensional coordinates of the cross section (y/l and z/l) are obtained from the analytic functions for the model height (H), width (W), camber (Z_0), and elliptical power (N). Each function has the same form, only the eight coefficients (C_1 to C_8) differ. The body is divided into four regions and the pylon is divided into two regions. Separate coefficients are used each of these six regions for the four functions. The values of the coefficients are listed in tables below. The form of these functions is defined as follows:

$$\begin{bmatrix} H(x/l) \\ W(x/l) \\ Z_0(x/l) \\ N(x/l) \end{bmatrix} = C_6 + C_7 \left(C_1 + C_2 \left(\frac{x/l + C_3}{C_4} \right)^{C_5} \right)^{1/C_8}$$

The coordinates at a given body station, x/l, are defined using polar coordinates. The nondimensional radial coordinate for the cross section is defined as follows:

$$r = \left(\frac{\left(\frac{H}{2} \frac{W}{2} \right)^N}{\left(\frac{H}{2} \sin\varphi \right)^N + \left(\frac{W}{2} \cos\varphi \right)^N} \right)^{1/N}$$

From the radial coordinate, the nondimensional coordinates on the cross section can be obtained from the following by varying φ from 0 to 2π.

$$y/l = r\sin\varphi$$

$$z/l = r\cos\varphi + Z_0$$

Coefficients to Define Body Shape

Func-tion	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
	$0.0 < x/l < 0.4$
H	1.0	-1.0	-.4	.4	1.8	0.0	.25	1.8
W	1.0	-1.0	-.4	.4	2.0	0.0	.25	2.0
Z_0	1.0	-1.0	-.4	.4	1.8	-.08	.08	1.8
N	2.0	3.0	0.0	.4	1.0	0.0	1.0	1.0
	$0.4 < x/l < 0.8$
	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
H	.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$Z0$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	$0.8 < x/l < 1.9$
	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
H	1.0	-1.0	-.8	1.1	1.5	.05	.2	.6
W	1,0	-1.0	-.8	1.1	1.5	.05	.2	.6
Z_0	1.0	-1.0	-.8	1.1	1.5	.04	-.04	.6
N	5.0	-3.0	-.8	1.1	1.0	0.0	0.0	0.0
	$1.9 < x/l < 2.0$
	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
H	1.0	-1.0	-1.9	.1	2.0	0.0	.05	2.0
W	1.0	-1.0	-1.9	.1	2.0	0.0	.05	2.0
Z_0	.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Coefficients to Define Pylon Shape

Func-tion	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
	$0.4 < x/l < 0.8$
H	1.0	-1.0	-.8	.4	3.0	0.0	.145	3.0
W	1.0	-1.0	-.8	.4	3.0	0.0	.166	3.0
Z_0	.125	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	$0.8 < x/l < 1.018$
	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
H	1.0	-1.0	-.8	.218	2.0	0.0	.145	2.0
W	1.0	-1.0	-.8	.218	2.0	0.0	.166	2.0
Z_0	1.0	-1.0	-.8	1.1	1.5	.065	.06	.6
N	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

References

1. McMahon, H. M.; Komerath, N. M.; and Hubbartt, J. E.: Studies of Rotor-Airframe Interactions in Forward Flight. AIAA paper 85-5015, October, 1985.

2. Leishman, J. G.; and Bi, Nai-pei: Aerodynamic Interactions Between a Rotor and a Fuselage in Forward Flight. *Proceedings of the 45th Annual Forum of the American Helicopter Society.* May, 1989.

3. Crouse, G. L., Jr.; Leishman, J. G.; and, Bi, N.: Theoretical and Experimental Study of Unsteady Rotor/Body Aerodynamic Interactions. *Journal of the American Helicopter Society*, Vol. 37, No. 1, Jan. 1992, pp. 55-65.

4. Modersheim, E.; and, Leishman, J. G.: Investigation of Aerodynamic Interactions Between a Rotor and a T-Tail Empennage. *Journal of the American Helicopter Society*, Vol. 43, No. 1, January, 1998, pp. 37-46.

5. Berry, John; and Bettschart, Nicolas: Rotor-Fuselage Interaction: Analysis and Validation with Experiment. *Proceedings of the 53rd Annual Forum of the AMerican Helicopter Society.* May, 1997.

6. Gentry, Garl L. Jr.; Quinto, P. Frank; Gatlin, Gregory M.; and Applin, Zachary T.: *The Langley 14- by 22-Foot Subsonic Tunnel: Description, Flow Characteristics, and Guide for Users*. NASA TP 3008. September 1990.

7. Phelps, Arthur E. III; and Berry, John D.: *Description of the U.S. Army Small-Scale 2-Meter Rotor Test System*. NASA TM 87762. February 1987. (Also available as AVSCOM TM 86-B-4).

8. Freeman, Carl E.; and Mineck, Raymond E.: *Fuselage Surface Pressure Measurements of a Helicopter Wind-Tunnel Model With a 3.15-Meter Diameter Single Rotor*. NASA TM-80051, 1979.

9. Ghee, T. A.; Berry, J. D.; Zori, L. A. J.; and, Elliott, J. W.: *Wake Geometry Measurements and Analytical Calculations on a Small-Scale Rotor Model*. NASA TP 3584, ATCOM TR-96-A-007, August, 1996.

10. Elliott, Joe W.; Althoff, Susan L.; and Sailey, Richard H.: *Inflow Measurements Made with a Laser Velocimeter on a Helicopter Model in Forward Flight, Volume I: Rectangular Planform at an Advance Ratio of 0.15*. NASA TM 100541, AVSCOM TM 88-B-004, April 1988.

11. Elliott, Joe W.; Althoff, Susan L.; and Sailey, Richard H.: *Inflow Measurements Made with a Laser Velocimeter on a Helicopter Model in Forward Flight, Volume II: Rectangular Planform at an Advance Ratio of 0.23*. NASA TM 100542, AVSCOM TM 88-B-005, April 1988.

Tables

Table 1. Balance Full-Scale Load and Uncertainty

Rotor Balance		
Component	**Full scale load**	**Uncertainty**
Thrust	300 lbf	± 1 lbf
Axial force	50 lbf	± 1 lbf
Side force	50 lbf	± 2 lbf
Pitching moment	1500 in-lbf	± 24 in-lbf
Rolling moment	1500 in-lbf	± 37 in-lbf
Torque	1800 in-lbf	± 1 in-lbf
Fuselage balance		
Component	**Full scale load**	**Uncertainty**
Normal force	250 lbf	$\pm .3$ lbf
Axial force	50 lbf	$\pm .1$ lbf
Pitching moment	2000 in-lbf	± 1.6 in-lbf
Rolling moment	1000 in-lbf	± 1.2 in-lbf
Yawing moment	1000 in-lbf	± 1.1 in-lbf
Side force	250 lbf	$\pm .3$ lbf

Table 2. Orifice Locations for Steady Pressure Measurements

Starboard Side				Port Side			
Orifice	x/l	y/l	z/l	Orifice	x/l	y/l	z/l
ESP101	0.353	0.054	-.129	ESP201	0.352	-.051	-.129
ESP102	0.354	0.117	-.103	ESP202	0.353	-.114	-.102
ESP103	0.353	0.126	.026	ESP203	0.353	-.125	-.030
ESP104	0.353	0.125	0.044	ESP204	0.352	-.126	0.040
ESP105	0.353	0.100	0.109	ESP205	0.352	-.104	0.105
ESP106	0.353	0.032	0.121	ESP206	0.352	-.036	0.120
ESP107	1.170	0.069	-.081	ESP207	1.171	-.066	-.082
ESP108	1.170	0.090	-.062	ESP208	1.171	-.087	-.065
ESP109	1.170	0.097	-.035	ESP209	1.171	-.094	-.038
ESP110	1.170	0.098	-.008	ESP210	1.170	-.096	-.010
ESP111	1.170	0.098	0.019	ESP211	1.170	-.096	0.016
ESP112	1.170	0.096	0.046	ESP212	1.170	-.096	0.046
ESP113	1.170	0.090	0.073	ESP213	1.170	-.089	0.071
ESP114	1.169	0.068	0.094	ESP214	1.169	-.067	0.094
ESP115	1.169	0.031	0.101	ESP215	1.170	-.030	0.100
ESP116	1.169	0.014	0.101	ESP216	1.170	-.013	0.101
ESP117	1.355	0.032	-.056	ESP217	1.355	-.030	-.057
ESP118	1.355	0.066	-.038	ESP218	1.354	-.065	-.040
ESP119	1.354	0.075	0.005	ESP219	1.355	-.074	0.002
ESP120	1.354	0.074	0.045	ESP220	1.354	-.073	0.043
ESP121	1.354	0.052	0.082	ESP221	1.354	-.051	0.081
ESP122	1.354	0.011	0.088	ESP222	1.354	-.010	0.087
ESP123	1.541	0.053	0.017	ESP223	1.541	-.053	0.015
ESP124	1.540	0.052	0.044	ESP224	1.540	-.051	0.043
ESP125	1.540	0.037	0.069	ESP225	1.540	-.037	0.068
ESP126	1.540	0.008	0.074	ESP226	1.540	-.007	0.074

Table 3.Orifice Locations for Unsteady Pressure Measurements

Top of body				Ring around body			
Orifice	x/l	y/l	z/l	Orifice	x/l	y/l	z/l
D5	0.052	0.007	0.004	D1	0.897	-.091	-.117
D6	0.096	0.006	0.037	D3	0.895	-.117	0.080
D8	0.201	0.007	0.090	D4	0.895	-.096	0.106
D9	0.256	0.007	0.110	D19	0.895	-.067	0.125
D17	0.467	0.007	0.185	D22	0.895	0.007	0.200
D18	0.600	0.007	0.202	D23	0.895	0.067	0.150
D22	0.896	0.007	0.200	D25	0.895	0.067	0.125
D26	1.001	0.007	0.150	D13	0.895	0.094	0.109
D14	1.180	0.007	0.100	D12	0.897	0.116	0.086
D15	1.368	0.007	0.087	D10	0.897	0.094	-.115
D16	1.556	0.007	0.073				

Table 4. Modified steady pressure coefficients on the model.

Test Conditions

μ	0.010	0.012	0.013	0.050	0.051	0.051	0.151	0.151	0.151	0.231	0.231	0.232
C_T/σ	0.0410	0.0639	0.0795	0.0396	0.0649	0.0820	0.0403	0.0656	0.0819	0.0411	0.0657	0.0820
θ,deg	9.4	11.8	13.4	9.0	11.9	13.6	7.7	10.3	12.0	8.2	10.4	11.9
A_1,deg	-0.1	-0.1	0.0	-1.5	-1.3	-1.3	-1.8	-2.7	-2.9	-0.5	-0.4	-1.3
B_1,deg	0.2	0.2	0.1	1.3	1.3	1.4	2.3	2.4	2.5	3.8	3.8	4.0
α_s	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Orifice						$C_p \times 100$						
ESP101	-0.137	-0.142	-0.148	-0.009	0.000	-0.044	-0.081	-0.044	-0.020	-0.192	-0.118	-0.097
ESP102	-0.233	-0.314	-0.463	-0.019	-0.211	-0.413	-0.107	-0.069	-0.037	-0.269	-0.217	-0.199
ESP103	-0.136	-0.196	-0.201	0.008	0.018	-0.065	-0.067	-0.012	0.028	-0.217	-0.132	-0.096
ESP104	-0.023	-0.102	-0.047	0.056	0.019	-0.086	-0.016	0.034	0.080	-0.173	-0.099	-0.066
ESP105	-0.023	0.036	0.253	-0.069	0.127	0.109	-0.003	0.051	0.085	-0.100	-0.020	0.040
ESP106	0.281	0.466	0.534	0.146	0.525	0.608	0.269	0.346	0.400	0.571	0.626	0.692
ESP107	-0.231	-0.224	-0.214	-0.123	-0.113	-0.126	-0.436	-0.361	-0.351	-1.067	-0.917	-0.976
ESP108	-0.183	-0.198	-0.186	-0.063	-0.057	-0.131	-0.149	-0.088	-0.051	-0.401	-0.332	-0.289
ESP109	-0.401	-0.531	-0.583	-0.094	-0.092	-0.199	-0.099	-0.056	-0.033	-0.241	-0.191	-0.149
ESP110	-0.254	-0.366	-0.429	0.008	-0.009	-0.110	-0.011	0.040	0.067	-0.106	-0.055	-0.008
ESP111	-0.347	-0.465	-0.542	-0.031	-0.085	-0.192	0.001	0.056	0.078	-0.053	-0.005	0.035
ESP112	-0.708	-0.870	-0.987	-0.192	-0.287	-0.451	-0.015	0.041	0.058	-0.020	0.019	0.060
ESP113	-0.712	-0.947	-1.157	-0.153	-0.393	-0.745	0.096	0.159	0.185	0.139	0.163	0.207
ESP114	-0.098	-0.050	-0.093	0.123	0.070	-0.029	0.166	0.244	0.274	0.166	0.202	0.279
ESP115	0.204	0.454	0.616	0.210	0.350	0.552	0.002	0.035	0.114	0.112	0.135	0.123
ESP116	0.464	0.708	0.878	0.380	0.512	0.710	0.269	0.284	0.230	0.440	0.449	0.415
ESP117	-0.292	-0.360	-0.367	-0.180	-0.239	-0.189	-0.123	-0.057	0.034	-0.361	-0.315	-0.174
ESP118	-0.324	-0.387	-0.366	-0.122	-0.164	-0.084	-0.160	-0.100	-0.036	-0.265	-0.224	-0.191
ESP119	-0.297	-0.490	-0.641	-0.277	-0.513	-0.544	-0.042	0.006	0.020	-0.045	-0.026	0.002
ESP120	-0.405	-0.762	-0.961	-0.539	-1.023	-1.315	0.036	0.091	0.110	0.060	0.084	0.103
ESP121	-0.135	-0.202	-0.252	-0.315	-0.507	-0.786	-0.002	0.096	0.133	-0.021	0.022	0.062
ESP122	0.441	0.684	0.900	0.497	0.690	0.917	0.142	0.205	0.197	0.224	0.307	0.326
ESP123	-0.026	-0.053	-0.050	-0.319	-0.581	-0.819	0.044	0.036	0.053	0.159	0.108	0.113
ESP124	-0.129	-0.143	-0.135	-0.849	-1.460	-1.804	-0.004	0.000	0.028	0.094	0.071	0.063
ESP125	-0.121	-0.139	-0.046	-0.492	-0.918	-0.921	-0.003	-0.021	0.038	0.083	0.104	0.093
ESP126	-0.183	-0.163	-0.085	0.171	0.373	0.598	-0.005	0.032	0.032	0.091	0.135	0.130

Table 4. Concluded.

Test Conditions

μ	0.010	0.012	0.013	0.050	0.051	0.051	0.151	0.151	0.151	0.231	0.231	0.232
C_T/σ	0.0410	0.0639	0.0795	0.0396	0.0649	0.0820	0.0403	0.0656	0.0819	0.0411	0.0657	0.0820
θ,deg	9.4	11.8	13.4	9.0	11.9	13.6	7.7	10.3	12.0	8.2	10.4	11.9
A_1,deg	-0.1	-0.1	0.0	-1.5	-1.3	-1.3	-1.8	-2.7	-2.9	-0.5	-0.4	-1.3
B_1,deg	0.2	0.2	0.1	1.3	1.3	1.4	2.3	2.4	2.5	3.8	3.8	4.0
a_s	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Orifice						$C_p \times 100$						
ESP201	-0.114	-0.109	-0.134	-0.020	0.008	0.020	-0.083	-0.049	-0.020	-0.198	-0.150	-0.129
ESP202	-0.138	-0.144	-0.144	-0.030	-0.080	-0.124	-0.125	-0.088	-0.061	-0.296	-0.248	-0.225
ESP203	-0.262	-0.295	-0.351	-0.036	-0.058	-0.111	-0.146	-0.103	-0.075	-0.358	-0.305	-0.278
ESP204	-0.493	-0.553	-0.704	-0.146	-0.288	-0.434	-0.209	-0.180	-0.167	-0.473	-0.433	-0.412
ESP205	-0.591	-0.600	-0.971	-0.268	-0.449	-0.619	-0.191	-0.177	-0.181	-0.446	-0.432	-0.420
ESP206	0.312	0.476	0.496	0.152	0.522	0.580	0.215	0.295	0.349	0.560	0.618	0.658
ESP207	-0.062	-0.071	-0.058	-0.019	-0.008	-0.001	-0.362	-0.306	-0.266	-0.902	-0.847	-0.801
ESP208	-0.019	-0.031	-0.026	0.063	0.066	-0.014	-0.073	-0.016	0.038	-0.436	-0.360	-0.326
ESP209	-0.273	-0.396	-0.467	-0.014	-0.026	-0.165	-0.050	0.004	0.048	-0.256	-0.173	-0.144
ESP210	-0.161	-0.271	-0.341	0.048	0.010	-0.087	0.019	0.074	0.114	-0.129	-0.044	-0.012
ESP211	-0.180	-0.286	-0.356	0.030	-0.036	-0.110	0.039	0.096	0.133	-0.069	0.015	0.045
ESP212	-0.419	-0.561	-0.658	-0.112	-0.216	-0.275	0.007	0.060	0.089	-0.068	0.016	0.039
ESP213	-0.440	-0.669	-0.811	-0.170	-0.371	-0.434	0.037	0.075	0.110	0.013	0.093	0.114
ESP214	0.147	0.189	0.242	-0.034	-0.018	0.110	0.064	0.124	0.192	0.037	0.162	0.200
ESP215	0.386	0.644	0.817	0.216	0.349	0.563	0.221	0.273	0.300	0.257	0.339	0.363
ESP216	0.298	0.579	0.763	0.203	0.344	0.562	0.189	0.249	0.264	0.301	0.385	0.388
ESP217	-0.302	-0.357	-0.375	-0.185	-0.296	-0.345	-0.162	-0.112	-0.102	-0.362	-0.412	-0.295
ESP218	-0.289	-0.454	-0.375	-0.190	-0.382	-0.480	-0.126	-0.112	-0.119	-0.312	-0.270	-0.219
ESP219	-0.521	-0.669	-0.742	-0.478	-0.635	-0.775	-0.134	-0.100	-0.098	-0.206	-0.162	-0.140
ESP220	-0.594	-0.729	-0.976	-0.597	-0.728	-0.881	-0.122	-0.089	-0.077	-0.165	-0.098	-0.100
ESP221	-0.204	-0.084	-0.083	-0.101	-0.032	0.104	-0.080	-0.045	-0.056	-0.151	-0.035	-0.022
ESP222	0.302	0.605	0.847	0.397	0.607	0.891	0.049	0.118	0.134	0.021	0.140	0.140
ESP223	-0.144	-0.140	-0.155	-0.464	-0.743	-0.940	-0.024	-0.007	-0.021	0.013	0.126	0.118
ESP224	-0.231	-0.221	-0.204	-0.672	-0.965	-1.240	-0.096	-0.088	-0.108	-0.039	0.029	0.009
ESP225	-0.102	-0.119	-0.086	-0.183	-0.140	-0.212	-0.099	-0.097	-0.125	-0.065	-0.030	-0.054
ESP226	-0.164	-0.147	-0.104	0.210	0.446	0.678	-0.043	-0.006	0.001	-0.001	0.066	0.066

Table 5. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0410$, $\mu = 0.010$, $\alpha_s = 0.0°$, $\theta = 9.4°$, $A_1 = -0.1°$, $B_1 = 0.2°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.177	0.281	0.310	0.303	0.055	0.021	0.128	-0.032	0.399	0.293	-0.101
1.5	0.178	0.283	0.313	0.305	0.055	0.021	0.129	-0.036	0.405	0.298	-0.094
2.9	0.183	0.289	0.316	0.308	0.058	0.021	0.129	-0.034	0.412	0.305	-0.088
4.3	0.189	0.292	0.320	0.312	0.062	0.021	0.129	-0.033	0.419	0.312	-0.080
5.8	0.191	0.295	0.326	0.315	0.061	0.021	0.130	-0.034	0.423	0.318	-0.070
7.2	0.193	0.301	0.328	0.317	0.062	0.019	0.129	-0.032	0.428	0.326	-0.062
8.6	0.199	0.308	0.333	0.321	0.063	0.021	0.128	-0.032	0.431	0.330	-0.058
10.0	0.207	0.313	0.338	0.326	0.065	0.023	0.128	-0.031	0.436	0.332	-0.048
11.4	0.210	0.320	0.342	0.328	0.066	0.024	0.127	-0.027	0.443	0.339	-0.040
12.8	0.217	0.328	0.348	0.333	0.066	0.023	0.126	-0.031	0.451	0.350	-0.038
14.2	0.223	0.333	0.355	0.340	0.070	0.024	0.126	-0.031	0.457	0.359	-0.032
15.6	0.228	0.339	0.361	0.345	0.073	0.025	0.125	-0.026	0.463	0.367	-0.021
17.0	0.235	0.348	0.369	0.352	0.075	0.025	0.124	-0.025	0.472	0.374	-0.011
18.4	0.242	0.357	0.379	0.359	0.076	0.025	0.121	-0.026	0.480	0.387	-0.007
19.8	0.241	0.358	0.382	0.363	0.078	0.026	0.119	-0.027	0.486	0.398	0.005
21.2	0.247	0.366	0.382	0.363	0.080	0.026	0.119	-0.030	0.494	0.403	0.011
22.6	0.256	0.376	0.395	0.372	0.081	0.025	0.119	-0.030	0.494	0.406	0.019
24.0	0.258	0.381	0.406	0.385	0.084	0.026	0.118	-0.031	0.493	0.397	0.019
25.4	0.264	0.388	0.409	0.388	0.084	0.028	0.114	-0.032	0.495	0.396	0.011
26.8	0.270	0.396	0.417	0.394	0.086	0.025	0.111	-0.030	0.494	0.392	0.006
28.3	0.274	0.403	0.423	0.398	0.087	0.024	0.110	-0.030	0.493	0.382	0.002
29.7	0.275	0.405	0.427	0.403	0.087	0.025	0.108	-0.024	0.489	0.383	0.002
31.1	0.276	0.407	0.430	0.405	0.088	0.025	0.107	-0.019	0.484	0.381	-0.002
32.5	0.279	0.409	0.430	0.405	0.090	0.023	0.103	-0.022	0.483	0.367	-0.007
33.9	0.278	0.409	0.430	0.405	0.089	0.022	0.100	-0.024	0.482	0.369	-0.003
35.3	0.277	0.407	0.431	0.406	0.085	0.021	0.096	-0.023	0.476	0.376	0.011
36.7	0.273	0.405	0.430	0.407	0.084	0.022	0.095	-0.020	0.469	0.365	0.003
38.1	0.270	0.403	0.429	0.405	0.083	0.023	0.094	-0.018	0.470	0.359	0.002
39.5	0.269	0.400	0.426	0.403	0.083	0.023	0.094	-0.019	0.466	0.364	0.011
40.9	0.262	0.396	0.423	0.401	0.078	0.023	0.094	-0.018	0.459	0.366	0.008
42.3	0.258	0.391	0.419	0.397	0.075	0.023	0.093	-0.020	0.454	0.358	0.007
43.7	0.256	0.387	0.414	0.393	0.076	0.023	0.093	-0.024	0.453	0.349	0.007
45.1	0.253	0.386	0.409	0.389	0.076	0.025	0.095	-0.027	0.450	0.342	0.004
46.5	0.250	0.381	0.404	0.386	0.074	0.025	0.097	-0.027	0.440	0.336	0.001
47.9	0.242	0.372	0.400	0.383	0.071	0.022	0.098	-0.029	0.433	0.329	0.000
49.3	0.235	0.366	0.396	0.380	0.067	0.020	0.099	-0.030	0.428	0.323	-0.001
50.8	0.233	0.362	0.389	0.374	0.066	0.019	0.099	-0.030	0.422	0.316	-0.004
52.2	0.230	0.357	0.383	0.368	0.067	0.020	0.102	-0.033	0.418	0.307	-0.007
53.6	0.225	0.352	0.378	0.365	0.066	0.019	0.104	-0.034	0.412	0.298	-0.010
55.0	0.221	0.345	0.374	0.361	0.062	0.018	0.105	-0.036	0.408	0.291	-0.012
56.4	0.214	0.337	0.366	0.356	0.061	0.019	0.106	-0.036	0.402	0.286	-0.016
57.8	0.208	0.331	0.359	0.348	0.063	0.019	0.107	-0.039	0.397	0.280	-0.019
59.2	0.205	0.327	0.352	0.344	0.062	0.019	0.111	-0.038	0.393	0.277	-0.021
60.6	0.199	0.321	0.349	0.339	0.059	0.020	0.111	-0.039	0.391	0.273	-0.024

Table 5. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.196	0.317	0.344	0.334	0.057	0.020	0.109	-0.038	0.388	0.269	-0.025
63.4	0.192	0.311	0.337	0.329	0.055	0.019	0.109	-0.038	0.383	0.265	-0.027
64.8	0.187	0.307	0.331	0.324	0.053	0.019	0.108	-0.040	0.381	0.262	-0.027
66.2	0.184	0.304	0.326	0.319	0.055	0.018	0.108	-0.041	0.379	0.261	-0.024
67.6	0.184	0.300	0.322	0.316	0.056	0.018	0.110	-0.046	0.376	0.258	-0.025
69.0	0.179	0.298	0.320	0.314	0.055	0.018	0.111	-0.048	0.376	0.256	-0.025
70.4	0.177	0.294	0.316	0.312	0.053	0.019	0.112	-0.043	0.374	0.253	-0.025
71.8	0.172	0.289	0.312	0.309	0.054	0.020	0.113	-0.041	0.374	0.252	-0.027
73.3	0.167	0.285	0.306	0.304	0.056	0.020	0.113	-0.038	0.373	0.251	-0.027
74.7	0.163	0.283	0.303	0.299	0.055	0.019	0.114	-0.039	0.374	0.251	-0.031
76.1	0.163	0.282	0.299	0.295	0.053	0.019	0.116	-0.041	0.376	0.253	-0.030
77.5	0.162	0.280	0.297	0.294	0.051	0.021	0.117	-0.040	0.376	0.253	-0.023
78.9	0.162	0.281	0.298	0.294	0.052	0.022	0.119	-0.040	0.379	0.252	-0.022
80.3	0.163	0.281	0.297	0.293	0.052	0.021	0.122	-0.044	0.380	0.252	-0.023
81.7	0.163	0.281	0.298	0.294	0.055	0.023	0.124	-0.047	0.381	0.256	-0.021
83.1	0.164	0.283	0.299	0.294	0.056	0.023	0.127	-0.046	0.384	0.258	-0.020
84.5	0.165	0.286	0.298	0.293	0.058	0.027	0.129	-0.046	0.386	0.260	-0.015
85.9	0.167	0.284	0.299	0.294	0.061	0.030	0.130	-0.049	0.390	0.263	-0.012
87.3	0.166	0.285	0.300	0.295	0.059	0.029	0.130	-0.051	0.398	0.266	-0.009
88.7	0.168	0.287	0.300	0.294	0.058	0.029	0.131	-0.049	0.404	0.271	-0.005
90.1	0.170	0.287	0.300	0.294	0.060	0.028	0.133	-0.046	0.411	0.276	-0.005
91.5	0.170	0.291	0.303	0.296	0.061	0.028	0.135	-0.043	0.419	0.282	-0.003
92.9	0.174	0.295	0.304	0.299	0.063	0.029	0.136	-0.040	0.425	0.292	0.001
94.3	0.177	0.296	0.307	0.301	0.065	0.028	0.136	-0.041	0.432	0.299	0.008
95.8	0.178	0.299	0.311	0.303	0.066	0.027	0.135	-0.040	0.439	0.306	0.013
97.2	0.179	0.304	0.314	0.305	0.067	0.026	0.135	-0.037	0.446	0.314	0.019
98.6	0.186	0.310	0.318	0.308	0.069	0.027	0.135	-0.036	0.450	0.319	0.028
100.0	0.193	0.316	0.322	0.312	0.070	0.027	0.133	-0.036	0.456	0.325	0.035
101.4	0.196	0.320	0.326	0.315	0.071	0.028	0.135	-0.033	0.466	0.333	0.042
102.8	0.202	0.326	0.331	0.318	0.072	0.027	0.135	-0.028	0.474	0.343	0.047
104.2	0.206	0.329	0.334	0.321	0.073	0.029	0.135	-0.029	0.481	0.354	0.049
105.6	0.211	0.331	0.337	0.325	0.077	0.031	0.136	-0.031	0.490	0.366	0.056
107.0	0.216	0.337	0.345	0.331	0.080	0.032	0.134	-0.027	0.501	0.375	0.066
108.4	0.221	0.343	0.353	0.338	0.082	0.031	0.134	-0.024	0.511	0.389	0.075
109.8	0.220	0.342	0.356	0.343	0.083	0.032	0.135	-0.025	0.520	0.406	0.084
111.2	0.223	0.346	0.356	0.342	0.085	0.032	0.137	-0.028	0.528	0.416	0.088
112.6	0.232	0.356	0.364	0.346	0.088	0.032	0.136	-0.026	0.533	0.425	0.099
114.0	0.232	0.357	0.373	0.356	0.089	0.029	0.134	-0.021	0.534	0.418	0.101
115.4	0.233	0.360	0.376	0.361	0.091	0.030	0.134	-0.020	0.536	0.422	0.092
116.8	0.240	0.368	0.383	0.366	0.093	0.031	0.134	-0.019	0.538	0.422	0.088
118.3	0.242	0.373	0.391	0.373	0.094	0.030	0.133	-0.011	0.540	0.413	0.086
119.7	0.246	0.377	0.393	0.376	0.094	0.030	0.131	-0.007	0.537	0.413	0.080
121.1	0.247	0.377	0.398	0.378	0.093	0.029	0.129	-0.009	0.530	0.419	0.077
122.5	0.248	0.376	0.398	0.381	0.093	0.031	0.126	-0.011	0.532	0.407	0.067

13

Table 5. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.249	0.379	0.395	0.379	0.093	0.031	0.124	-0.011	0.532	0.400	0.064
125.3	0.247	0.376	0.399	0.382	0.092	0.030	0.122	-0.012	0.527	0.410	0.073
126.7	0.245	0.373	0.398	0.382	0.090	0.029	0.120	-0.014	0.517	0.402	0.068
128.1	0.244	0.370	0.396	0.381	0.088	0.029	0.121	-0.014	0.513	0.392	0.063
129.5	0.241	0.368	0.395	0.381	0.087	0.031	0.123	-0.014	0.511	0.390	0.063
130.9	0.241	0.368	0.394	0.380	0.085	0.031	0.124	-0.017	0.502	0.387	0.057
132.3	0.238	0.363	0.391	0.378	0.083	0.030	0.123	-0.019	0.495	0.378	0.052
133.7	0.237	0.359	0.388	0.375	0.081	0.029	0.122	-0.018	0.489	0.367	0.048
135.1	0.238	0.360	0.381	0.370	0.080	0.030	0.124	-0.017	0.484	0.356	0.040
136.5	0.234	0.356	0.377	0.365	0.078	0.029	0.124	-0.012	0.475	0.348	0.034
137.9	0.228	0.348	0.374	0.362	0.076	0.028	0.124	-0.005	0.466	0.340	0.030
139.3	0.225	0.343	0.370	0.360	0.072	0.027	0.125	-0.006	0.458	0.331	0.026
140.8	0.223	0.340	0.365	0.357	0.068	0.027	0.126	-0.011	0.450	0.323	0.020
142.2	0.219	0.337	0.360	0.351	0.066	0.027	0.129	-0.019	0.443	0.313	0.015
143.6	0.215	0.331	0.356	0.347	0.065	0.026	0.130	-0.026	0.435	0.303	0.009
145.0	0.213	0.327	0.352	0.344	0.061	0.025	0.130	-0.027	0.430	0.295	0.003
146.4	0.209	0.324	0.345	0.340	0.061	0.025	0.131	-0.026	0.423	0.287	-0.003
147.8	0.205	0.319	0.342	0.335	0.061	0.025	0.132	-0.030	0.415	0.282	-0.006
149.2	0.201	0.313	0.336	0.331	0.057	0.023	0.133	-0.032	0.411	0.276	-0.009
150.6	0.195	0.307	0.331	0.327	0.052	0.021	0.132	-0.031	0.406	0.272	-0.012
152.0	0.192	0.302	0.327	0.323	0.047	0.020	0.129	-0.029	0.402	0.266	-0.014
153.4	0.190	0.299	0.321	0.317	0.046	0.019	0.129	-0.028	0.397	0.263	-0.016
154.8	0.186	0.296	0.316	0.312	0.047	0.019	0.131	-0.028	0.393	0.262	-0.016
156.2	0.184	0.291	0.313	0.308	0.046	0.018	0.132	-0.030	0.391	0.261	-0.015
157.6	0.183	0.289	0.308	0.305	0.045	0.016	0.134	-0.034	0.389	0.258	-0.016
159.0	0.180	0.287	0.305	0.304	0.045	0.018	0.137	-0.037	0.386	0.256	-0.017
160.4	0.178	0.281	0.305	0.302	0.044	0.019	0.138	-0.041	0.385	0.255	-0.019
161.8	0.174	0.278	0.300	0.300	0.043	0.021	0.139	-0.040	0.384	0.253	-0.022
163.3	0.173	0.275	0.297	0.297	0.044	0.021	0.141	-0.038	0.384	0.254	-0.022
164.7	0.171	0.274	0.294	0.294	0.044	0.022	0.145	-0.036	0.385	0.254	-0.022
166.1	0.171	0.273	0.293	0.291	0.043	0.023	0.147	-0.037	0.387	0.254	-0.023
167.5	0.170	0.271	0.292	0.290	0.043	0.025	0.148	-0.039	0.388	0.256	-0.021
168.9	0.172	0.272	0.291	0.290	0.043	0.025	0.150	-0.041	0.389	0.257	-0.022
170.3	0.174	0.272	0.292	0.290	0.043	0.023	0.151	-0.039	0.391	0.259	-0.024
171.7	0.174	0.272	0.292	0.291	0.044	0.024	0.151	-0.034	0.393	0.262	-0.023
173.1	0.174	0.273	0.293	0.290	0.045	0.025	0.151	-0.036	0.396	0.266	-0.022
174.5	0.176	0.274	0.292	0.289	0.046	0.025	0.153	-0.039	0.397	0.268	-0.019
175.9	0.177	0.274	0.293	0.289	0.045	0.025	0.156	-0.037	0.402	0.272	-0.018
177.3	0.178	0.275	0.292	0.287	0.043	0.024	0.155	-0.036	0.408	0.276	-0.018
178.7	0.180	0.275	0.291	0.287	0.044	0.024	0.157	-0.036	0.413	0.282	-0.018
180.1	0.178	0.275	0.293	0.287	0.045	0.024	0.158	-0.037	0.421	0.286	-0.017
181.5	0.180	0.277	0.292	0.287	0.046	0.025	0.159	-0.037	0.429	0.292	-0.015
182.9	0.183	0.278	0.292	0.288	0.046	0.025	0.161	-0.037	0.437	0.301	-0.011
184.3	0.183	0.277	0.294	0.290	0.046	0.023	0.161	-0.040	0.445	0.309	-0.006

Table 5. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.183	0.281	0.299	0.292	0.046	0.022	0.161	-0.043	0.451	0.318	0.001
187.2	0.186	0.285	0.302	0.294	0.047	0.020	0.162	-0.045	0.458	0.328	0.005
188.6	0.189	0.290	0.304	0.296	0.047	0.018	0.162	-0.043	0.464	0.335	0.008
190.0	0.195	0.297	0.310	0.301	0.048	0.019	0.161	-0.041	0.471	0.341	0.014
191.4	0.199	0.300	0.311	0.300	0.050	0.017	0.160	-0.044	0.480	0.350	0.019
192.8	0.203	0.305	0.313	0.302	0.047	0.017	0.158	-0.042	0.491	0.362	0.021
194.2	0.206	0.307	0.316	0.307	0.049	0.020	0.157	-0.041	0.499	0.376	0.024
195.6	0.207	0.309	0.322	0.310	0.053	0.021	0.157	-0.042	0.509	0.388	0.031
197.0	0.214	0.318	0.329	0.317	0.055	0.022	0.155	-0.039	0.523	0.401	0.042
198.4	0.218	0.323	0.335	0.323	0.055	0.024	0.154	-0.037	0.534	0.417	0.046
199.8	0.218	0.320	0.337	0.326	0.060	0.024	0.155	-0.037	0.544	0.434	0.054
201.2	0.221	0.327	0.338	0.324	0.062	0.025	0.157	-0.036	0.554	0.446	0.063
202.6	0.230	0.337	0.345	0.330	0.062	0.027	0.157	-0.033	0.560	0.459	0.073
204.0	0.228	0.335	0.353	0.341	0.063	0.025	0.155	-0.032	0.564	0.460	0.082
205.4	0.229	0.339	0.356	0.343	0.066	0.025	0.153	-0.028	0.570	0.460	0.073
206.8	0.237	0.347	0.360	0.346	0.068	0.026	0.153	-0.023	0.572	0.461	0.067
208.3	0.236	0.344	0.364	0.351	0.065	0.026	0.151	-0.020	0.573	0.460	0.065
209.7	0.232	0.344	0.369	0.354	0.064	0.026	0.147	-0.016	0.569	0.456	0.062
211.1	0.238	0.350	0.367	0.351	0.063	0.024	0.144	-0.012	0.565	0.462	0.060
212.5	0.237	0.346	0.368	0.351	0.064	0.022	0.140	-0.008	0.564	0.455	0.046
213.9	0.234	0.344	0.365	0.350	0.064	0.020	0.136	-0.007	0.562	0.454	0.055
215.3	0.230	0.342	0.364	0.350	0.062	0.020	0.133	-0.009	0.558	0.457	0.054
216.7	0.229	0.337	0.365	0.351	0.060	0.021	0.130	-0.006	0.545	0.444	0.048
218.1	0.227	0.338	0.361	0.349	0.060	0.020	0.128	-0.008	0.543	0.440	0.044
219.5	0.224	0.335	0.361	0.346	0.060	0.020	0.127	-0.008	0.537	0.432	0.043
220.9	0.221	0.331	0.360	0.345	0.058	0.020	0.129	-0.008	0.527	0.430	0.040
222.3	0.220	0.332	0.355	0.344	0.056	0.020	0.128	-0.008	0.518	0.422	0.030
223.7	0.220	0.330	0.353	0.341	0.052	0.019	0.125	-0.007	0.508	0.406	0.023
225.1	0.218	0.327	0.351	0.338	0.049	0.020	0.126	-0.008	0.502	0.395	0.016
226.5	0.214	0.324	0.346	0.335	0.049	0.021	0.125	-0.006	0.491	0.383	0.006
227.9	0.209	0.320	0.343	0.331	0.048	0.019	0.124	-0.008	0.481	0.373	0.001
229.3	0.207	0.317	0.341	0.328	0.046	0.019	0.125	-0.014	0.470	0.364	-0.001
230.8	0.205	0.315	0.337	0.326	0.044	0.021	0.124	-0.014	0.460	0.354	-0.007
232.2	0.201	0.312	0.335	0.324	0.042	0.021	0.126	-0.014	0.451	0.343	-0.013
233.6	0.200	0.309	0.333	0.323	0.042	0.020	0.127	-0.015	0.441	0.332	-0.019
235.0	0.197	0.304	0.331	0.322	0.043	0.020	0.126	-0.020	0.436	0.324	-0.027
236.4	0.194	0.303	0.328	0.319	0.043	0.020	0.125	-0.022	0.428	0.315	-0.032
237.8	0.188	0.299	0.324	0.315	0.042	0.017	0.128	-0.021	0.420	0.308	-0.034
239.2	0.184	0.293	0.321	0.313	0.041	0.015	0.131	-0.020	0.413	0.302	-0.036
240.6	0.183	0.290	0.317	0.311	0.039	0.016	0.131	-0.021	0.410	0.298	-0.036
242.0	0.180	0.288	0.315	0.307	0.038	0.015	0.130	-0.022	0.405	0.294	-0.037
243.4	0.181	0.287	0.312	0.306	0.039	0.013	0.130	-0.022	0.400	0.290	-0.039
244.8	0.178	0.285	0.310	0.305	0.038	0.012	0.130	-0.023	0.397	0.290	-0.039
246.2	0.175	0.282	0.307	0.302	0.037	0.012	0.130	-0.024	0.394	0.287	-0.039

Table 5. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.173	0.280	0.305	0.299	0.038	0.012	0.131	-0.023	0.390	0.284	-0.040
249.0	0.171	0.277	0.302	0.298	0.039	0.014	0.134	-0.023	0.387	0.282	-0.039
250.4	0.169	0.274	0.301	0.297	0.040	0.016	0.137	-0.022	0.387	0.280	-0.039
251.8	0.168	0.273	0.299	0.296	0.042	0.018	0.139	-0.022	0.385	0.278	-0.040
253.3	0.164	0.270	0.298	0.295	0.043	0.018	0.140	-0.018	0.384	0.276	-0.040
254.7	0.163	0.269	0.296	0.294	0.045	0.018	0.143	-0.017	0.384	0.277	-0.042
256.1	0.163	0.269	0.295	0.291	0.044	0.020	0.146	-0.016	0.383	0.277	-0.041
257.5	0.163	0.269	0.294	0.290	0.042	0.023	0.149	-0.013	0.384	0.279	-0.039
258.9	0.165	0.270	0.295	0.291	0.042	0.026	0.150	-0.017	0.386	0.279	-0.037
260.3	0.165	0.271	0.296	0.292	0.042	0.026	0.148	-0.018	0.387	0.279	-0.036
261.7	0.166	0.271	0.297	0.293	0.044	0.025	0.149	-0.018	0.388	0.282	-0.034
263.1	0.166	0.272	0.296	0.293	0.047	0.027	0.151	-0.019	0.389	0.285	-0.034
264.5	0.167	0.274	0.298	0.294	0.045	0.026	0.153	-0.021	0.390	0.285	-0.033
265.9	0.168	0.275	0.297	0.292	0.045	0.025	0.153	-0.021	0.393	0.288	-0.030
267.3	0.169	0.275	0.299	0.294	0.044	0.024	0.151	-0.022	0.398	0.292	-0.027
268.7	0.170	0.278	0.301	0.294	0.044	0.023	0.151	-0.023	0.404	0.296	-0.026
270.1	0.174	0.279	0.300	0.293	0.044	0.024	0.149	-0.024	0.410	0.301	-0.026
271.5	0.175	0.279	0.301	0.295	0.044	0.024	0.147	-0.026	0.417	0.306	-0.023
272.9	0.176	0.282	0.304	0.298	0.047	0.023	0.149	-0.026	0.422	0.313	-0.019
274.3	0.180	0.285	0.308	0.301	0.048	0.021	0.152	-0.026	0.428	0.320	-0.014
275.8	0.184	0.289	0.311	0.302	0.047	0.020	0.153	-0.029	0.435	0.328	-0.010
277.2	0.186	0.293	0.313	0.304	0.050	0.018	0.154	-0.031	0.443	0.337	-0.005
278.6	0.192	0.300	0.320	0.309	0.051	0.017	0.155	-0.033	0.445	0.344	0.001
280.0	0.199	0.307	0.324	0.312	0.053	0.019	0.156	-0.031	0.450	0.346	0.006
281.4	0.203	0.312	0.326	0.313	0.054	0.020	0.156	-0.030	0.461	0.353	0.011
282.8	0.210	0.320	0.334	0.319	0.056	0.021	0.154	-0.029	0.470	0.367	0.014
284.2	0.216	0.325	0.340	0.326	0.061	0.023	0.153	-0.027	0.478	0.378	0.017
285.6	0.221	0.330	0.346	0.330	0.066	0.025	0.153	-0.025	0.486	0.387	0.023
287.0	0.228	0.338	0.353	0.337	0.068	0.027	0.152	-0.025	0.495	0.397	0.033
288.4	0.234	0.345	0.363	0.346	0.069	0.027	0.149	-0.026	0.504	0.409	0.038
289.8	0.234	0.345	0.368	0.351	0.071	0.027	0.146	-0.024	0.513	0.424	0.044
291.2	0.238	0.354	0.369	0.350	0.074	0.027	0.147	-0.019	0.521	0.432	0.050
292.6	0.248	0.364	0.380	0.358	0.076	0.028	0.147	-0.015	0.525	0.439	0.055
294.0	0.249	0.368	0.389	0.369	0.077	0.028	0.146	-0.014	0.526	0.438	0.062
295.4	0.256	0.374	0.393	0.373	0.080	0.030	0.145	-0.011	0.529	0.435	0.056
296.8	0.263	0.382	0.401	0.379	0.082	0.030	0.143	-0.012	0.531	0.433	0.045
298.3	0.263	0.384	0.408	0.383	0.083	0.030	0.140	-0.009	0.532	0.425	0.037
299.7	0.265	0.386	0.408	0.385	0.082	0.030	0.138	-0.008	0.528	0.425	0.038
301.1	0.270	0.391	0.410	0.387	0.081	0.028	0.137	-0.007	0.524	0.426	0.024
302.5	0.268	0.389	0.413	0.388	0.082	0.028	0.134	-0.005	0.521	0.413	0.016
303.9	0.268	0.387	0.409	0.388	0.080	0.026	0.132	-0.004	0.522	0.414	0.019
305.3	0.264	0.385	0.411	0.388	0.078	0.026	0.128	-0.001	0.515	0.418	0.019
306.7	0.264	0.382	0.411	0.388	0.075	0.026	0.123	0.002	0.504	0.410	0.021
308.1	0.263	0.380	0.409	0.388	0.074	0.026	0.123	0.001	0.503	0.407	0.013

Table 5. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.258	0.378	0.407	0.386	0.073	0.026	0.121	0.002	0.498	0.404	0.017
310.9	0.254	0.372	0.404	0.382	0.070	0.024	0.120	0.002	0.490	0.405	0.013
312.3	0.251	0.367	0.397	0.378	0.066	0.024	0.116	0.001	0.484	0.399	0.003
313.7	0.249	0.363	0.393	0.374	0.064	0.023	0.115	0.000	0.476	0.391	0.002
315.1	0.245	0.360	0.390	0.371	0.063	0.022	0.115	-0.003	0.472	0.379	-0.007
316.5	0.240	0.354	0.385	0.368	0.059	0.021	0.115	-0.004	0.464	0.369	-0.013
317.9	0.235	0.348	0.382	0.365	0.057	0.020	0.113	-0.004	0.454	0.362	-0.018
319.3	0.232	0.344	0.377	0.362	0.057	0.019	0.111	-0.006	0.444	0.353	-0.025
320.8	0.228	0.340	0.372	0.357	0.055	0.020	0.111	-0.008	0.438	0.346	-0.032
322.2	0.224	0.335	0.368	0.354	0.055	0.021	0.115	-0.010	0.432	0.337	-0.039
323.6	0.221	0.330	0.366	0.352	0.054	0.022	0.117	-0.011	0.425	0.326	-0.043
325.0	0.218	0.326	0.363	0.350	0.052	0.022	0.116	-0.011	0.419	0.320	-0.052
326.4	0.214	0.321	0.358	0.346	0.052	0.024	0.115	-0.013	0.413	0.314	-0.059
327.8	0.209	0.317	0.353	0.343	0.054	0.024	0.115	-0.013	0.407	0.309	-0.066
329.2	0.205	0.311	0.349	0.339	0.050	0.022	0.116	-0.013	0.401	0.302	-0.075
330.6	0.202	0.306	0.346	0.337	0.046	0.022	0.115	-0.015	0.399	0.297	-0.080
332.0	0.197	0.302	0.344	0.333	0.046	0.021	0.114	-0.013	0.394	0.293	-0.090
333.4	0.195	0.299	0.336	0.326	0.047	0.021	0.113	-0.012	0.389	0.289	-0.095
334.8	0.192	0.295	0.331	0.322	0.045	0.022	0.114	-0.016	0.386	0.288	-0.096
336.2	0.187	0.290	0.328	0.319	0.045	0.022	0.115	-0.022	0.382	0.286	-0.097
337.6	0.186	0.288	0.324	0.318	0.047	0.020	0.115	-0.027	0.379	0.282	-0.100
339.0	0.183	0.285	0.323	0.316	0.049	0.021	0.116	-0.031	0.380	0.280	-0.102
340.4	0.179	0.280	0.321	0.316	0.050	0.022	0.117	-0.033	0.377	0.278	-0.106
341.8	0.177	0.277	0.319	0.314	0.050	0.022	0.117	-0.033	0.375	0.275	-0.106
343.3	0.173	0.275	0.314	0.309	0.049	0.022	0.118	-0.035	0.375	0.275	-0.103
344.7	0.172	0.273	0.312	0.308	0.048	0.022	0.119	-0.037	0.374	0.275	-0.105
346.1	0.171	0.271	0.310	0.305	0.047	0.022	0.121	-0.038	0.374	0.275	-0.105
347.5	0.169	0.272	0.308	0.302	0.046	0.023	0.123	-0.037	0.375	0.276	-0.104
348.9	0.172	0.272	0.307	0.300	0.048	0.024	0.123	-0.038	0.376	0.275	-0.104
350.3	0.172	0.273	0.307	0.301	0.049	0.023	0.122	-0.039	0.376	0.276	-0.108
351.7	0.172	0.273	0.308	0.301	0.049	0.022	0.122	-0.037	0.376	0.278	-0.111
353.1	0.172	0.274	0.307	0.301	0.049	0.021	0.122	-0.035	0.377	0.278	-0.113
354.5	0.172	0.274	0.306	0.301	0.050	0.021	0.124	-0.034	0.380	0.279	-0.112
355.9	0.173	0.275	0.307	0.300	0.050	0.023	0.125	-0.033	0.383	0.282	-0.109
357.3	0.173	0.276	0.309	0.302	0.051	0.023	0.126	-0.033	0.389	0.286	-0.106
358.7	0.174	0.279	0.309	0.302	0.053	0.022	0.128	-0.032	0.394	0.288	-0.103

Table 6. Modified unsteady pressure coefficients around the body at $x/l = 0.90$. $C_T/\sigma = 0.0410$, $\mu = 0.010$, $\alpha_s = 0.0°$, $\theta = 9.4°$, $A_1 = -0.1°$, $B_1 = 0.2°$.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	-0.002	-0.077	0.185	0.175	0.202	0.128	0.009	0.051	-0.285	0.076
1.5	0.001	-0.076	0.188	0.176	0.200	0.129	0.011	0.052	-0.287	0.076
2.9	0.003	-0.078	0.187	0.175	0.199	0.129	0.013	0.054	-0.285	0.077
4.3	0.005	-0.078	0.188	0.177	0.199	0.129	0.011	0.051	-0.285	0.077
5.8	0.007	-0.079	0.187	0.178	0.196	0.130	0.012	0.049	-0.285	0.078
7.2	0.007	-0.080	0.184	0.175	0.191	0.129	0.013	0.053	-0.285	0.077
8.6	0.009	-0.083	0.182	0.172	0.189	0.128	0.014	0.058	-0.284	0.077
10.0	0.010	-0.085	0.179	0.169	0.187	0.128	0.013	0.060	-0.284	0.077
11.4	0.010	-0.084	0.181	0.169	0.186	0.127	0.013	0.057	-0.285	0.077
12.8	0.009	-0.083	0.181	0.170	0.184	0.126	0.014	0.055	-0.285	0.077
14.2	0.008	-0.084	0.178	0.169	0.183	0.126	0.015	0.057	-0.286	0.077
15.6	0.009	-0.087	0.174	0.167	0.183	0.125	0.013	0.060	-0.286	0.077
17.0	0.009	-0.090	0.174	0.163	0.182	0.124	0.013	0.062	-0.285	0.076
18.4	0.008	-0.090	0.180	0.163	0.180	0.121	0.012	0.061	-0.285	0.076
19.8	0.007	-0.091	0.180	0.163	0.176	0.119	0.011	0.065	-0.285	0.076
21.2	0.007	-0.089	0.179	0.163	0.178	0.119	0.013	0.067	-0.286	0.076
22.6	0.007	-0.086	0.179	0.166	0.181	0.119	0.013	0.067	-0.287	0.075
24.0	0.007	-0.084	0.181	0.168	0.181	0.118	0.012	0.071	-0.286	0.075
25.4	0.010	-0.082	0.186	0.169	0.179	0.114	0.011	0.076	-0.286	0.075
26.8	0.014	-0.084	0.182	0.166	0.178	0.111	0.009	0.078	-0.285	0.074
28.3	0.015	-0.086	0.178	0.162	0.177	0.110	0.007	0.080	-0.285	0.074
29.7	0.013	-0.086	0.180	0.163	0.177	0.108	0.006	0.081	-0.285	0.074
31.1	0.012	-0.087	0.177	0.160	0.177	0.107	0.004	0.081	-0.286	0.074
32.5	0.014	-0.091	0.172	0.156	0.176	0.103	0.001	0.080	-0.286	0.074
33.9	0.015	-0.096	0.167	0.151	0.174	0.100	-0.003	0.082	-0.287	0.074
35.3	0.012	-0.096	0.167	0.151	0.171	0.096	-0.006	0.083	-0.289	0.074
36.7	0.009	-0.099	0.162	0.149	0.170	0.095	-0.008	0.083	-0.290	0.075
38.1	0.008	-0.101	0.159	0.146	0.169	0.094	-0.009	0.083	-0.291	0.075
39.5	0.006	-0.100	0.162	0.148	0.168	0.094	-0.011	0.078	-0.290	0.075
40.9	0.003	-0.098	0.163	0.148	0.169	0.094	-0.012	0.080	-0.293	0.075
42.3	0.004	-0.096	0.163	0.148	0.168	0.093	-0.012	0.085	-0.292	0.076
43.7	0.004	-0.096	0.163	0.147	0.169	0.093	-0.014	0.081	-0.292	0.077
45.1	0.004	-0.092	0.165	0.148	0.169	0.095	-0.016	0.078	-0.294	0.077
46.5	0.003	-0.087	0.171	0.152	0.169	0.097	-0.016	0.079	-0.292	0.077
47.9	0.000	-0.089	0.171	0.152	0.170	0.098	-0.016	0.076	-0.292	0.078
49.3	0.001	-0.089	0.167	0.150	0.168	0.099	-0.015	0.076	-0.291	0.078
50.8	0.002	-0.090	0.167	0.150	0.169	0.099	-0.014	0.076	-0.292	0.078
52.2	0.001	-0.085	0.171	0.153	0.171	0.102	-0.014	0.071	-0.292	0.078
53.6	0.001	-0.083	0.174	0.156	0.173	0.104	-0.014	0.068	-0.291	0.079
55.0	0.001	-0.083	0.174	0.157	0.175	0.105	-0.015	0.067	-0.292	0.079
56.4	0.000	-0.080	0.178	0.160	0.175	0.106	-0.015	0.064	-0.294	0.079
57.8	-0.001	-0.077	0.178	0.162	0.176	0.107	-0.012	0.064	-0.297	0.079
59.2	0.000	-0.078	0.177	0.164	0.177	0.111	-0.008	0.067	-0.296	0.079
60.6	0.001	-0.076	0.178	0.165	0.178	0.111	-0.008	0.067	-0.295	0.080

Table 6. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.002	-0.072	0.182	0.167	0.177	0.109	-0.008	0.064	-0.294	0.080
63.4	0.000	-0.073	0.181	0.168	0.177	0.109	-0.008	0.060	-0.293	0.080
64.8	0.000	-0.073	0.179	0.168	0.177	0.108	-0.008	0.056	-0.294	0.079
66.2	0.001	-0.074	0.183	0.170	0.178	0.108	-0.008	0.056	-0.297	0.079
67.6	0.000	-0.073	0.184	0.170	0.179	0.110	-0.008	0.054	-0.298	0.079
69.0	-0.001	-0.072	0.184	0.169	0.180	0.111	-0.004	0.054	-0.299	0.079
70.4	-0.002	-0.073	0.184	0.171	0.181	0.112	-0.003	0.052	-0.298	0.078
71.8	-0.004	-0.072	0.185	0.173	0.181	0.113	-0.004	0.050	-0.297	0.078
73.3	-0.004	-0.070	0.184	0.175	0.183	0.113	-0.004	0.049	-0.296	0.078
74.7	-0.006	-0.070	0.188	0.178	0.184	0.114	-0.002	0.049	-0.295	0.078
76.1	-0.005	-0.071	0.188	0.178	0.183	0.116	-0.001	0.046	-0.297	0.078
77.5	-0.003	-0.072	0.184	0.176	0.186	0.117	0.001	0.043	-0.297	0.078
78.9	-0.003	-0.071	0.186	0.179	0.190	0.119	0.002	0.047	-0.295	0.078
80.3	-0.003	-0.069	0.192	0.183	0.193	0.122	0.004	0.049	-0.294	0.078
81.7	-0.004	-0.066	0.197	0.186	0.196	0.124	0.006	0.047	-0.293	0.078
83.1	-0.002	-0.063	0.200	0.188	0.198	0.127	0.009	0.048	-0.290	0.079
84.5	-0.001	-0.061	0.201	0.189	0.200	0.129	0.011	0.048	-0.288	0.079
85.9	-0.001	-0.060	0.200	0.188	0.200	0.130	0.012	0.046	-0.289	0.079
87.3	0.001	-0.059	0.200	0.186	0.200	0.130	0.013	0.046	-0.288	0.080
88.7	0.003	-0.057	0.202	0.186	0.200	0.131	0.013	0.048	-0.288	0.080
90.1	0.005	-0.056	0.202	0.186	0.201	0.133	0.014	0.050	-0.287	0.080
91.5	0.006	-0.057	0.204	0.185	0.201	0.135	0.016	0.052	-0.287	0.080
92.9	0.008	-0.058	0.204	0.184	0.200	0.136	0.018	0.052	-0.288	0.080
94.3	0.009	-0.059	0.204	0.183	0.199	0.136	0.019	0.052	-0.287	0.080
95.8	0.008	-0.059	0.204	0.181	0.196	0.135	0.020	0.054	-0.287	0.080
97.2	0.009	-0.061	0.202	0.178	0.194	0.135	0.020	0.055	-0.285	0.080
98.6	0.008	-0.064	0.197	0.175	0.191	0.135	0.021	0.057	-0.286	0.080
100.0	0.009	-0.069	0.194	0.173	0.190	0.133	0.022	0.056	-0.286	0.080
101.4	0.007	-0.069	0.195	0.175	0.190	0.135	0.022	0.057	-0.286	0.080
102.8	0.005	-0.070	0.198	0.175	0.187	0.135	0.023	0.058	-0.284	0.080
104.2	0.003	-0.073	0.198	0.173	0.186	0.135	0.022	0.056	-0.285	0.079
105.6	0.002	-0.076	0.192	0.171	0.185	0.136	0.022	0.061	-0.284	0.079
107.0	0.001	-0.080	0.191	0.168	0.183	0.134	0.023	0.065	-0.284	0.078
108.4	-0.001	-0.081	0.190	0.167	0.184	0.134	0.023	0.066	-0.283	0.078
109.8	-0.002	-0.082	0.188	0.167	0.185	0.135	0.024	0.065	-0.282	0.077
111.2	-0.003	-0.081	0.187	0.166	0.188	0.137	0.025	0.067	-0.283	0.077
112.6	-0.003	-0.079	0.189	0.167	0.191	0.136	0.025	0.072	-0.283	0.076
114.0	-0.003	-0.079	0.192	0.166	0.190	0.134	0.025	0.078	-0.283	0.076
115.4	0.000	-0.077	0.194	0.164	0.188	0.134	0.026	0.079	-0.281	0.076
116.8	0.005	-0.078	0.193	0.163	0.191	0.134	0.025	0.078	-0.281	0.075
118.3	0.006	-0.081	0.190	0.162	0.191	0.133	0.026	0.084	-0.280	0.075
119.7	0.007	-0.081	0.189	0.161	0.190	0.131	0.024	0.090	-0.279	0.075
121.1	0.005	-0.080	0.189	0.161	0.189	0.129	0.022	0.091	-0.278	0.075
122.5	0.006	-0.081	0.187	0.158	0.187	0.126	0.019	0.092	-0.276	0.076

Table 6. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.009	-0.088	0.182	0.154	0.188	0.124	0.017	0.092	-0.277	0.077
125.3	0.009	-0.089	0.181	0.152	0.189	0.122	0.015	0.090	-0.278	0.077
126.7	0.006	-0.089	0.180	0.152	0.187	0.120	0.013	0.093	-0.279	0.077
128.1	0.005	-0.090	0.178	0.149	0.187	0.121	0.011	0.092	-0.277	0.077
129.5	0.004	-0.091	0.179	0.149	0.189	0.123	0.011	0.090	-0.277	0.077
130.9	0.004	-0.091	0.179	0.149	0.192	0.124	0.008	0.095	-0.278	0.078
132.3	0.005	-0.091	0.180	0.150	0.196	0.123	0.006	0.096	-0.277	0.078
133.7	0.004	-0.093	0.178	0.148	0.199	0.122	0.004	0.091	-0.278	0.078
135.1	0.004	-0.092	0.178	0.147	0.202	0.124	0.002	0.088	-0.278	0.078
136.5	0.001	-0.088	0.183	0.150	0.204	0.124	0.002	0.090	-0.277	0.078
137.9	0.000	-0.088	0.181	0.150	0.205	0.124	0.001	0.091	-0.277	0.078
139.3	0.002	-0.088	0.178	0.148	0.204	0.125	0.001	0.090	-0.278	0.078
140.8	0.002	-0.084	0.183	0.152	0.203	0.126	0.002	0.088	-0.277	0.078
142.2	0.001	-0.083	0.186	0.155	0.205	0.129	0.000	0.084	-0.278	0.078
143.6	0.002	-0.083	0.184	0.153	0.207	0.130	0.000	0.083	-0.279	0.078
145.0	0.004	-0.084	0.185	0.154	0.210	0.130	0.000	0.081	-0.280	0.078
146.4	0.002	-0.083	0.188	0.158	0.215	0.131	-0.001	0.081	-0.281	0.077
147.8	0.001	-0.078	0.191	0.164	0.215	0.132	0.000	0.081	-0.282	0.077
149.2	0.002	-0.077	0.193	0.167	0.212	0.133	0.000	0.078	-0.283	0.077
150.6	0.003	-0.078	0.194	0.170	0.212	0.132	-0.002	0.076	-0.281	0.077
152.0	0.004	-0.075	0.198	0.174	0.211	0.129	-0.004	0.073	-0.281	0.077
153.4	0.002	-0.074	0.200	0.176	0.210	0.129	-0.005	0.072	-0.281	0.077
154.8	0.003	-0.074	0.195	0.175	0.207	0.131	-0.005	0.070	-0.284	0.077
156.2	0.004	-0.075	0.194	0.176	0.208	0.132	-0.005	0.066	-0.286	0.077
157.6	0.003	-0.075	0.198	0.178	0.212	0.134	-0.006	0.064	-0.284	0.077
159.0	0.001	-0.073	0.202	0.178	0.214	0.137	-0.005	0.065	-0.283	0.077
160.4	-0.001	-0.073	0.203	0.180	0.214	0.138	-0.003	0.060	-0.285	0.077
161.8	-0.001	-0.071	0.204	0.181	0.217	0.139	-0.002	0.058	-0.285	0.078
163.3	-0.003	-0.067	0.210	0.185	0.223	0.141	-0.001	0.060	-0.281	0.078
164.7	-0.003	-0.065	0.218	0.192	0.228	0.145	0.001	0.059	-0.279	0.079
166.1	-0.002	-0.064	0.219	0.196	0.232	0.147	0.004	0.055	-0.282	0.079
167.5	0.000	-0.066	0.217	0.196	0.235	0.148	0.005	0.053	-0.281	0.080
168.9	0.000	-0.064	0.219	0.198	0.238	0.150	0.007	0.055	-0.280	0.079
170.3	-0.001	-0.064	0.221	0.201	0.239	0.151	0.007	0.055	-0.279	0.079
171.7	-0.001	-0.064	0.221	0.202	0.238	0.151	0.008	0.056	-0.277	0.080
173.1	0.000	-0.061	0.223	0.203	0.241	0.151	0.008	0.055	-0.277	0.080
174.5	0.000	-0.060	0.225	0.202	0.248	0.153	0.009	0.054	-0.276	0.081
175.9	0.001	-0.061	0.225	0.201	0.253	0.156	0.011	0.055	-0.277	0.081
177.3	0.002	-0.059	0.232	0.201	0.254	0.155	0.012	0.055	-0.278	0.081
178.7	0.003	-0.057	0.235	0.201	0.255	0.157	0.014	0.053	-0.278	0.081
180.1	0.004	-0.059	0.231	0.204	0.254	0.158	0.014	0.053	-0.279	0.081
181.5	0.006	-0.059	0.231	0.208	0.253	0.159	0.014	0.056	-0.280	0.081
182.9	0.007	-0.059	0.231	0.210	0.253	0.161	0.018	0.056	-0.281	0.082
184.3	0.007	-0.061	0.230	0.211	0.253	0.161	0.017	0.054	-0.281	0.081

Table 6. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.006	-0.061	0.232	0.212	0.251	0.161	0.018	0.053	-0.282	0.081
187.2	0.006	-0.061	0.234	0.207	0.249	0.162	0.020	0.054	-0.284	0.080
188.6	0.007	-0.063	0.233	0.203	0.248	0.162	0.020	0.056	-0.283	0.080
190.0	0.006	-0.065	0.231	0.203	0.247	0.161	0.021	0.054	-0.284	0.080
191.4	0.004	-0.066	0.226	0.202	0.245	0.160	0.020	0.058	-0.285	0.079
192.8	0.003	-0.068	0.226	0.202	0.243	0.158	0.019	0.061	-0.284	0.079
194.2	0.001	-0.071	0.228	0.200	0.241	0.157	0.020	0.058	-0.285	0.078
195.6	0.000	-0.076	0.225	0.197	0.239	0.157	0.019	0.059	-0.285	0.078
197.0	-0.002	-0.080	0.224	0.194	0.234	0.155	0.018	0.064	-0.284	0.078
198.4	-0.002	-0.081	0.225	0.194	0.231	0.154	0.019	0.068	-0.282	0.078
199.8	-0.003	-0.081	0.222	0.194	0.230	0.155	0.021	0.071	-0.282	0.077
201.2	-0.004	-0.081	0.218	0.193	0.229	0.157	0.025	0.073	-0.282	0.077
202.6	-0.003	-0.079	0.224	0.195	0.229	0.157	0.025	0.074	-0.283	0.078
204.0	-0.002	-0.076	0.227	0.197	0.226	0.155	0.024	0.079	-0.282	0.078
205.4	0.002	-0.074	0.227	0.197	0.224	0.153	0.022	0.083	-0.279	0.078
206.8	0.005	-0.076	0.224	0.194	0.223	0.153	0.023	0.084	-0.280	0.078
208.3	0.007	-0.081	0.221	0.189	0.221	0.151	0.023	0.087	-0.280	0.078
209.7	0.008	-0.082	0.220	0.188	0.219	0.147	0.020	0.090	-0.278	0.078
211.1	0.006	-0.083	0.221	0.189	0.216	0.144	0.017	0.094	-0.277	0.078
212.5	0.007	-0.086	0.221	0.185	0.215	0.140	0.013	0.096	-0.277	0.078
213.9	0.010	-0.091	0.216	0.182	0.212	0.136	0.010	0.098	-0.277	0.079
215.3	0.009	-0.094	0.212	0.178	0.208	0.133	0.008	0.098	-0.278	0.079
216.7	0.006	-0.099	0.207	0.175	0.206	0.130	0.007	0.097	-0.278	0.079
218.1	0.005	-0.102	0.207	0.174	0.205	0.128	0.005	0.100	-0.277	0.079
219.5	0.004	-0.100	0.211	0.175	0.206	0.127	0.004	0.101	-0.274	0.079
220.9	0.002	-0.101	0.208	0.175	0.207	0.129	0.006	0.099	-0.275	0.080
222.3	0.003	-0.101	0.213	0.174	0.208	0.128	0.009	0.102	-0.275	0.080
223.7	0.002	-0.103	0.215	0.173	0.208	0.125	0.007	0.103	-0.273	0.080
225.1	0.002	-0.104	0.215	0.171	0.210	0.126	0.004	0.100	-0.275	0.079
226.5	0.001	-0.101	0.218	0.173	0.211	0.125	0.002	0.101	-0.274	0.079
227.9	-0.002	-0.100	0.216	0.171	0.213	0.124	0.000	0.100	-0.273	0.079
229.3	-0.002	-0.098	0.212	0.170	0.212	0.125	0.000	0.098	-0.274	0.079
230.8	-0.001	-0.096	0.214	0.170	0.213	0.124	0.000	0.098	-0.273	0.079
232.2	-0.001	-0.092	0.218	0.172	0.212	0.126	-0.001	0.093	-0.274	0.079
233.6	-0.002	-0.095	0.216	0.174	0.213	0.127	0.001	0.092	-0.274	0.078
235.0	0.000	-0.096	0.210	0.171	0.212	0.126	0.000	0.097	-0.273	0.078
236.4	0.002	-0.094	0.212	0.175	0.212	0.125	-0.001	0.091	-0.273	0.078
237.8	-0.001	-0.090	0.216	0.178	0.213	0.128	-0.001	0.084	-0.278	0.079
239.2	0.000	-0.087	0.219	0.178	0.214	0.131	-0.001	0.085	-0.279	0.079
240.6	0.001	-0.087	0.219	0.180	0.216	0.131	-0.003	0.081	-0.280	0.079
242.0	0.002	-0.084	0.221	0.183	0.216	0.130	-0.006	0.079	-0.281	0.079
243.4	0.002	-0.082	0.224	0.188	0.215	0.130	-0.006	0.081	-0.279	0.080
244.8	0.001	-0.081	0.222	0.188	0.216	0.130	-0.006	0.077	-0.279	0.081
246.2	0.002	-0.080	0.223	0.188	0.217	0.130	-0.008	0.073	-0.281	0.081

Table 6. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.002	-0.079	0.223	0.190	0.220	0.131	-0.008	0.071	-0.282	0.081
249.0	0.000	-0.078	0.223	0.191	0.222	0.134	-0.006	0.070	-0.282	0.081
250.4	-0.002	-0.075	0.223	0.193	0.225	0.137	-0.005	0.073	-0.283	0.081
251.8	-0.002	-0.073	0.226	0.196	0.228	0.139	-0.003	0.073	-0.283	0.082
253.3	-0.004	-0.069	0.226	0.199	0.231	0.140	-0.003	0.075	-0.282	0.082
254.7	-0.006	-0.064	0.225	0.200	0.234	0.143	-0.002	0.074	-0.281	0.083
256.1	-0.005	-0.062	0.224	0.201	0.237	0.146	-0.001	0.071	-0.283	0.083
257.5	-0.004	-0.059	0.224	0.202	0.239	0.149	0.001	0.069	-0.284	0.082
258.9	-0.005	-0.060	0.223	0.202	0.240	0.150	0.003	0.066	-0.284	0.083
260.3	-0.006	-0.061	0.223	0.202	0.241	0.148	0.003	0.063	-0.285	0.083
261.7	-0.006	-0.064	0.222	0.202	0.242	0.149	0.003	0.065	-0.285	0.083
263.1	-0.007	-0.065	0.219	0.202	0.242	0.151	0.003	0.068	-0.284	0.082
264.5	-0.008	-0.062	0.222	0.204	0.244	0.153	0.004	0.066	-0.284	0.082
265.9	-0.007	-0.063	0.223	0.207	0.244	0.153	0.002	0.065	-0.286	0.082
267.3	-0.007	-0.065	0.221	0.209	0.245	0.151	0.002	0.066	-0.286	0.082
268.7	-0.007	-0.065	0.221	0.211	0.247	0.151	0.004	0.066	-0.288	0.082
270.1	-0.006	-0.067	0.219	0.209	0.245	0.149	0.004	0.061	-0.288	0.081
271.5	-0.005	-0.068	0.217	0.208	0.243	0.147	0.005	0.058	-0.289	0.081
272.9	-0.003	-0.067	0.215	0.207	0.243	0.149	0.005	0.061	-0.290	0.081
274.3	-0.005	-0.065	0.217	0.206	0.242	0.152	0.006	0.066	-0.289	0.080
275.8	-0.006	-0.065	0.220	0.208	0.240	0.153	0.008	0.065	-0.290	0.080
277.2	-0.005	-0.066	0.220	0.206	0.238	0.154	0.008	0.063	-0.292	0.080
278.6	-0.005	-0.070	0.218	0.203	0.237	0.155	0.010	0.067	-0.292	0.080
280.0	-0.004	-0.073	0.216	0.201	0.235	0.156	0.011	0.066	-0.292	0.079
281.4	-0.006	-0.075	0.213	0.199	0.230	0.156	0.012	0.065	-0.292	0.079
282.8	-0.008	-0.075	0.213	0.197	0.227	0.154	0.014	0.069	-0.292	0.080
284.2	-0.009	-0.077	0.212	0.195	0.223	0.153	0.015	0.073	-0.291	0.080
285.6	-0.010	-0.079	0.208	0.192	0.222	0.153	0.014	0.075	-0.290	0.080
287.0	-0.010	-0.083	0.204	0.190	0.222	0.152	0.015	0.077	-0.290	0.080
288.4	-0.011	-0.085	0.205	0.190	0.220	0.149	0.017	0.081	-0.289	0.080
289.8	-0.012	-0.085	0.204	0.189	0.217	0.146	0.018	0.084	-0.289	0.079
291.2	-0.012	-0.084	0.206	0.189	0.217	0.147	0.020	0.086	-0.289	0.079
292.6	-0.012	-0.079	0.208	0.190	0.217	0.147	0.021	0.088	-0.289	0.079
294.0	-0.010	-0.077	0.206	0.189	0.216	0.146	0.023	0.090	-0.287	0.079
295.4	-0.006	-0.077	0.208	0.188	0.217	0.145	0.023	0.095	-0.286	0.079
296.8	-0.003	-0.081	0.202	0.185	0.216	0.143	0.024	0.097	-0.284	0.078
298.3	-0.002	-0.083	0.198	0.181	0.214	0.140	0.024	0.099	-0.285	0.078
299.7	-0.003	-0.084	0.198	0.181	0.212	0.138	0.023	0.102	-0.283	0.078
301.1	-0.003	-0.083	0.196	0.181	0.210	0.137	0.022	0.101	-0.283	0.078
302.5	-0.002	-0.085	0.194	0.178	0.209	0.134	0.018	0.101	-0.283	0.078
303.9	0.001	-0.093	0.185	0.171	0.206	0.132	0.016	0.100	-0.283	0.078
305.3	0.001	-0.095	0.181	0.168	0.203	0.128	0.012	0.100	-0.283	0.077
306.7	-0.004	-0.098	0.175	0.167	0.201	0.123	0.008	0.098	-0.282	0.077
308.1	-0.004	-0.101	0.173	0.164	0.200	0.123	0.007	0.099	-0.283	0.077

Table 6 Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	-0.005	-0.104	0.170	0.161	0.198	0.121	0.006	0.102	-0.282	0.077
310.9	-0.005	-0.103	0.173	0.160	0.196	0.120	0.004	0.101	-0.283	0.077
312.3	-0.007	-0.105	0.172	0.161	0.195	0.116	0.002	0.101	-0.283	0.077
313.7	-0.007	-0.108	0.166	0.157	0.191	0.115	0.000	0.100	-0.283	0.076
315.1	-0.007	-0.106	0.165	0.156	0.191	0.115	-0.001	0.098	-0.282	0.076
316.5	-0.010	-0.108	0.167	0.158	0.190	0.115	-0.002	0.098	-0.281	0.076
317.9	-0.010	-0.108	0.167	0.157	0.189	0.113	-0.005	0.098	-0.279	0.076
319.3	-0.010	-0.111	0.166	0.157	0.186	0.111	-0.004	0.094	-0.280	0.076
320.8	-0.009	-0.111	0.166	0.159	0.186	0.111	-0.004	0.090	-0.282	0.076
322.2	-0.008	-0.106	0.172	0.164	0.188	0.115	-0.002	0.088	-0.283	0.076
323.6	-0.007	-0.109	0.174	0.165	0.191	0.117	0.000	0.088	-0.283	0.077
325.0	-0.005	-0.105	0.174	0.164	0.190	0.116	-0.002	0.088	-0.282	0.078
326.4	-0.006	-0.103	0.177	0.166	0.191	0.115	-0.003	0.087	-0.282	0.078
327.8	-0.006	-0.100	0.178	0.167	0.192	0.115	-0.003	0.080	-0.284	0.078
329.2	-0.004	-0.100	0.183	0.169	0.193	0.116	-0.002	0.077	-0.286	0.078
330.6	-0.004	-0.097	0.185	0.169	0.192	0.115	-0.001	0.077	-0.286	0.078
332.0	-0.003	-0.093	0.186	0.169	0.191	0.114	-0.003	0.076	-0.286	0.079
333.4	-0.004	-0.093	0.189	0.171	0.193	0.113	-0.004	0.072	-0.284	0.079
334.8	-0.004	-0.093	0.190	0.172	0.193	0.114	-0.003	0.069	-0.285	0.079
336.2	-0.002	-0.092	0.188	0.173	0.195	0.115	-0.002	0.066	-0.287	0.079
337.6	-0.005	-0.089	0.185	0.174	0.195	0.115	-0.002	0.060	-0.287	0.079
339.0	-0.006	-0.089	0.184	0.173	0.196	0.116	-0.001	0.058	-0.286	0.079
340.4	-0.007	-0.091	0.185	0.174	0.198	0.117	0.001	0.058	-0.286	0.079
341.8	-0.008	-0.089	0.187	0.175	0.199	0.117	0.002	0.062	-0.285	0.079
343.3	-0.009	-0.087	0.189	0.177	0.200	0.118	0.004	0.062	-0.284	0.079
344.7	-0.011	-0.085	0.187	0.178	0.201	0.119	0.006	0.061	-0.284	0.079
346.1	-0.009	-0.085	0.186	0.177	0.203	0.121	0.007	0.061	-0.285	0.079
347.5	-0.009	-0.084	0.187	0.176	0.204	0.123	0.008	0.058	-0.285	0.078
348.9	-0.009	-0.084	0.188	0.176	0.205	0.123	0.008	0.055	-0.286	0.078
350.3	-0.010	-0.082	0.189	0.176	0.204	0.122	0.007	0.056	-0.286	0.078
351.7	-0.011	-0.083	0.188	0.175	0.203	0.122	0.006	0.056	-0.285	0.077
353.1	-0.010	-0.084	0.186	0.174	0.203	0.122	0.006	0.056	-0.284	0.077
354.5	-0.009	-0.081	0.187	0.176	0.204	0.124	0.006	0.054	-0.284	0.076
355.9	-0.007	-0.079	0.188	0.177	0.204	0.125	0.007	0.054	-0.285	0.076
357.3	-0.006	-0.076	0.187	0.175	0.203	0.126	0.008	0.054	-0.286	0.076
358.7	-0.003	-0.076	0.186	0.175	0.203	0.128	0.010	0.052	-0.286	0.076

Table 7. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0639$, $\mu = 0.012$, $\alpha_s = 0.0°$, $\theta = 11.8°$, $A_1 = -0.1°$, $B_1 = 0.2°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.368	0.599	0.617	0.547	0.254	-0.076	0.074	-0.016	0.596	0.518	-0.043
1.5	0.371	0.602	0.622	0.551	0.254	-0.078	0.074	-0.016	0.604	0.523	-0.035
2.9	0.377	0.610	0.627	0.556	0.256	-0.079	0.075	-0.019	0.609	0.528	-0.028
4.3	0.387	0.618	0.633	0.561	0.259	-0.081	0.079	-0.018	0.617	0.533	-0.019
5.8	0.393	0.622	0.639	0.565	0.260	-0.082	0.082	-0.021	0.627	0.539	-0.010
7.2	0.400	0.629	0.646	0.571	0.261	-0.080	0.082	-0.021	0.639	0.548	-0.004
8.6	0.408	0.637	0.652	0.576	0.265	-0.077	0.077	-0.020	0.652	0.560	-0.004
10.0	0.414	0.643	0.659	0.580	0.269	-0.081	0.075	-0.024	0.663	0.572	0.000
11.4	0.423	0.654	0.668	0.588	0.271	-0.080	0.077	-0.022	0.676	0.585	0.013
12.8	0.434	0.662	0.677	0.598	0.275	-0.074	0.080	-0.017	0.691	0.600	0.026
14.2	0.442	0.673	0.691	0.607	0.279	-0.074	0.078	-0.015	0.706	0.616	0.038
15.6	0.452	0.688	0.702	0.616	0.281	-0.075	0.074	-0.018	0.716	0.634	0.053
17.0	0.464	0.699	0.717	0.627	0.287	-0.075	0.079	-0.017	0.727	0.650	0.068
18.4	0.476	0.714	0.730	0.637	0.292	-0.076	0.083	-0.013	0.741	0.666	0.081
19.8	0.494	0.733	0.744	0.648	0.296	-0.080	0.081	-0.011	0.755	0.691	0.093
21.2	0.509	0.748	0.762	0.663	0.298	-0.076	0.076	-0.010	0.767	0.709	0.120
22.6	0.518	0.759	0.775	0.676	0.304	-0.074	0.075	-0.007	0.775	0.718	0.130
24.0	0.529	0.774	0.790	0.688	0.309	-0.074	0.077	-0.006	0.781	0.728	0.136
25.4	0.542	0.790	0.805	0.700	0.311	-0.070	0.078	-0.006	0.789	0.737	0.148
26.8	0.555	0.806	0.819	0.709	0.313	-0.068	0.072	-0.005	0.793	0.745	0.148
28.3	0.567	0.821	0.833	0.719	0.315	-0.067	0.068	-0.006	0.794	0.750	0.151
29.7	0.584	0.837	0.846	0.729	0.320	-0.064	0.068	-0.007	0.798	0.753	0.149
31.1	0.594	0.850	0.858	0.738	0.322	-0.063	0.067	-0.004	0.800	0.743	0.134
32.5	0.602	0.860	0.868	0.747	0.325	-0.061	0.062	-0.005	0.797	0.739	0.139
33.9	0.609	0.871	0.876	0.753	0.326	-0.063	0.058	-0.004	0.786	0.759	0.134
35.3	0.617	0.881	0.887	0.762	0.325	-0.068	0.053	0.001	0.774	0.740	0.108
36.7	0.614	0.880	0.895	0.767	0.324	-0.067	0.052	0.004	0.784	0.703	0.105
38.1	0.606	0.876	0.895	0.769	0.323	-0.065	0.051	0.002	0.776	0.682	0.081
39.5	0.605	0.872	0.890	0.766	0.325	-0.062	0.048	0.005	0.740	0.673	0.054
40.9	0.607	0.875	0.887	0.762	0.323	-0.059	0.046	0.007	0.729	0.670	0.053
42.3	0.600	0.867	0.886	0.759	0.319	-0.058	0.045	0.000	0.719	0.657	0.055
43.7	0.588	0.854	0.877	0.754	0.316	-0.057	0.046	-0.003	0.712	0.639	0.037
45.1	0.571	0.841	0.863	0.745	0.313	-0.055	0.047	0.005	0.704	0.616	0.004
46.5	0.552	0.819	0.851	0.732	0.308	-0.053	0.043	0.006	0.689	0.596	-0.021
47.9	0.543	0.810	0.834	0.722	0.305	-0.051	0.043	0.000	0.677	0.577	-0.037
49.3	0.529	0.794	0.822	0.709	0.304	-0.048	0.046	-0.002	0.666	0.565	-0.045
50.8	0.515	0.777	0.809	0.700	0.297	-0.046	0.049	-0.003	0.653	0.554	-0.053
52.2	0.506	0.766	0.796	0.689	0.292	-0.045	0.052	0.000	0.643	0.540	-0.063
53.6	0.491	0.750	0.782	0.679	0.289	-0.043	0.051	0.003	0.637	0.529	-0.069
55.0	0.469	0.728	0.768	0.668	0.285	-0.041	0.048	0.000	0.629	0.517	-0.074
56.4	0.449	0.705	0.751	0.658	0.282	-0.038	0.051	-0.002	0.621	0.509	-0.090
57.8	0.433	0.687	0.731	0.644	0.277	-0.035	0.054	-0.002	0.612	0.502	-0.104
59.2	0.416	0.669	0.715	0.626	0.272	-0.035	0.058	-0.007	0.604	0.497	-0.109
60.6	0.406	0.657	0.696	0.612	0.268	-0.035	0.062	-0.007	0.600	0.493	-0.104

Table 7. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.397	0.645	0.684	0.599	0.263	-0.035	0.063	-0.006	0.595	0.488	-0.092
63.4	0.387	0.635	0.674	0.591	0.258	-0.035	0.066	-0.009	0.590	0.478	-0.080
64.8	0.379	0.625	0.666	0.582	0.252	-0.033	0.070	-0.006	0.585	0.474	-0.067
66.2	0.370	0.615	0.658	0.575	0.248	-0.031	0.070	-0.009	0.581	0.468	-0.070
67.6	0.361	0.605	0.646	0.569	0.244	-0.030	0.071	-0.013	0.578	0.464	-0.073
69.0	0.353	0.596	0.639	0.561	0.239	-0.025	0.072	-0.011	0.573	0.462	-0.073
70.4	0.349	0.592	0.630	0.553	0.240	-0.024	0.077	-0.009	0.572	0.461	-0.072
71.8	0.346	0.586	0.625	0.546	0.240	-0.025	0.078	-0.011	0.572	0.459	-0.066
73.3	0.340	0.581	0.618	0.544	0.236	-0.022	0.077	-0.018	0.571	0.457	-0.070
74.7	0.339	0.579	0.616	0.540	0.234	-0.020	0.076	-0.018	0.571	0.457	-0.070
76.1	0.337	0.576	0.612	0.537	0.233	-0.019	0.078	-0.017	0.571	0.458	-0.071
77.5	0.334	0.574	0.607	0.534	0.232	-0.018	0.079	-0.020	0.571	0.460	-0.074
78.9	0.335	0.573	0.605	0.530	0.230	-0.015	0.081	-0.021	0.571	0.461	-0.068
80.3	0.333	0.571	0.601	0.527	0.229	-0.015	0.084	-0.024	0.572	0.464	-0.065
81.7	0.332	0.571	0.600	0.525	0.228	-0.015	0.084	-0.026	0.576	0.464	-0.064
83.1	0.335	0.575	0.599	0.523	0.225	-0.015	0.087	-0.029	0.581	0.464	-0.065
84.5	0.339	0.575	0.599	0.524	0.227	-0.015	0.088	-0.028	0.586	0.471	-0.059
85.9	0.341	0.576	0.600	0.526	0.226	-0.015	0.090	-0.029	0.591	0.476	-0.054
87.3	0.345	0.580	0.603	0.528	0.224	-0.018	0.098	-0.033	0.596	0.481	-0.057
88.7	0.346	0.581	0.603	0.528	0.225	-0.016	0.098	-0.033	0.604	0.490	-0.053
90.1	0.347	0.584	0.605	0.529	0.226	-0.016	0.097	-0.031	0.611	0.499	-0.050
91.5	0.352	0.587	0.609	0.531	0.229	-0.016	0.099	-0.030	0.621	0.508	-0.048
92.9	0.357	0.595	0.613	0.536	0.231	-0.014	0.103	-0.033	0.632	0.520	-0.037
94.3	0.366	0.604	0.618	0.541	0.233	-0.016	0.105	-0.035	0.642	0.535	-0.027
95.8	0.374	0.610	0.625	0.546	0.235	-0.014	0.107	-0.034	0.653	0.546	-0.016
97.2	0.380	0.617	0.630	0.549	0.238	-0.012	0.110	-0.034	0.665	0.561	0.006
98.6	0.387	0.623	0.636	0.553	0.240	-0.012	0.110	-0.036	0.678	0.578	0.023
100.0	0.393	0.631	0.642	0.558	0.241	-0.011	0.112	-0.032	0.692	0.595	0.031
101.4	0.400	0.639	0.647	0.563	0.244	-0.010	0.112	-0.028	0.707	0.616	0.040
102.8	0.410	0.648	0.656	0.572	0.248	-0.010	0.114	-0.031	0.723	0.636	0.053
104.2	0.419	0.657	0.665	0.579	0.247	-0.011	0.114	-0.030	0.738	0.658	0.069
105.6	0.427	0.667	0.675	0.589	0.250	-0.011	0.116	-0.029	0.755	0.683	0.085
107.0	0.437	0.676	0.685	0.596	0.254	-0.013	0.118	-0.030	0.772	0.707	0.099
108.4	0.447	0.687	0.693	0.602	0.259	-0.017	0.115	-0.026	0.783	0.730	0.108
109.8	0.462	0.702	0.708	0.614	0.261	-0.017	0.111	-0.023	0.801	0.761	0.118
111.2	0.474	0.717	0.720	0.627	0.263	-0.017	0.108	-0.021	0.818	0.784	0.139
112.6	0.484	0.726	0.732	0.639	0.267	-0.016	0.109	-0.020	0.828	0.804	0.152
114.0	0.493	0.733	0.743	0.646	0.271	-0.016	0.108	-0.015	0.838	0.815	0.155
115.4	0.503	0.748	0.755	0.654	0.273	-0.017	0.104	-0.012	0.842	0.831	0.160
116.8	0.515	0.761	0.766	0.663	0.272	-0.020	0.101	-0.013	0.846	0.852	0.167
118.3	0.524	0.773	0.774	0.669	0.275	-0.019	0.099	-0.010	0.851	0.858	0.166
119.7	0.539	0.787	0.786	0.678	0.277	-0.020	0.095	-0.006	0.856	0.872	0.165
121.1	0.548	0.795	0.796	0.688	0.278	-0.023	0.091	0.000	0.857	0.868	0.156
122.5	0.555	0.804	0.802	0.695	0.281	-0.020	0.088	0.006	0.855	0.860	0.146

25

Table 7. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.563	0.814	0.810	0.701	0.281	-0.022	0.084	0.004	0.846	0.890	0.155
125.3	0.563	0.818	0.818	0.705	0.280	-0.024	0.082	-0.001	0.833	0.869	0.146
126.7	0.562	0.819	0.821	0.710	0.280	-0.026	0.081	0.002	0.830	0.843	0.123
128.1	0.559	0.817	0.821	0.712	0.281	-0.025	0.078	0.005	0.822	0.836	0.104
129.5	0.559	0.816	0.821	0.711	0.282	-0.024	0.075	0.005	0.801	0.801	0.080
130.9	0.559	0.817	0.820	0.710	0.282	-0.026	0.074	0.001	0.786	0.788	0.061
132.3	0.558	0.814	0.818	0.708	0.276	-0.025	0.074	-0.002	0.770	0.786	0.061
133.7	0.552	0.805	0.814	0.706	0.272	-0.025	0.072	-0.001	0.750	0.777	0.056
135.1	0.538	0.790	0.802	0.698	0.271	-0.027	0.069	-0.002	0.741	0.750	0.037
136.5	0.525	0.775	0.786	0.685	0.268	-0.027	0.068	-0.003	0.731	0.722	0.014
137.9	0.518	0.767	0.774	0.673	0.264	-0.025	0.066	-0.006	0.717	0.702	-0.002
139.3	0.509	0.756	0.765	0.665	0.259	-0.025	0.067	-0.009	0.698	0.689	-0.013
140.8	0.497	0.742	0.756	0.657	0.253	-0.026	0.070	-0.006	0.682	0.676	-0.025
142.2	0.488	0.730	0.745	0.650	0.251	-0.027	0.069	-0.007	0.670	0.663	-0.041
143.6	0.471	0.713	0.732	0.640	0.251	-0.025	0.067	-0.011	0.663	0.648	-0.049
145.0	0.454	0.696	0.718	0.627	0.250	-0.024	0.068	-0.011	0.655	0.632	-0.060
146.4	0.440	0.680	0.705	0.615	0.245	-0.024	0.070	-0.012	0.644	0.620	-0.072
147.8	0.425	0.664	0.691	0.604	0.238	-0.024	0.075	-0.017	0.633	0.610	-0.083
149.2	0.412	0.650	0.677	0.591	0.235	-0.024	0.077	-0.018	0.623	0.604	-0.095
150.6	0.406	0.642	0.663	0.580	0.232	-0.025	0.076	-0.018	0.616	0.597	-0.099
152.0	0.397	0.634	0.652	0.569	0.230	-0.025	0.078	-0.022	0.610	0.587	-0.106
153.4	0.388	0.624	0.645	0.563	0.226	-0.024	0.082	-0.027	0.604	0.577	-0.111
154.8	0.381	0.615	0.636	0.556	0.220	-0.026	0.083	-0.034	0.598	0.566	-0.114
156.2	0.372	0.606	0.626	0.547	0.215	-0.027	0.086	-0.036	0.592	0.559	-0.118
157.6	0.366	0.597	0.619	0.541	0.213	-0.024	0.085	-0.033	0.587	0.552	-0.126
159.0	0.361	0.591	0.610	0.533	0.209	-0.023	0.086	-0.033	0.582	0.546	-0.134
160.4	0.360	0.588	0.604	0.527	0.206	-0.023	0.091	-0.034	0.579	0.541	-0.133
161.8	0.357	0.582	0.601	0.523	0.204	-0.024	0.095	-0.029	0.576	0.534	-0.130
163.3	0.355	0.579	0.596	0.522	0.204	-0.024	0.097	-0.024	0.574	0.528	-0.131
164.7	0.355	0.574	0.595	0.520	0.203	-0.022	0.097	-0.021	0.574	0.524	-0.130
166.1	0.351	0.574	0.591	0.516	0.204	-0.024	0.099	-0.022	0.574	0.521	-0.130
167.5	0.351	0.573	0.588	0.514	0.204	-0.026	0.100	-0.025	0.574	0.520	-0.126
168.9	0.349	0.570	0.585	0.511	0.203	-0.025	0.104	-0.023	0.573	0.519	-0.124
170.3	0.348	0.569	0.585	0.511	0.204	-0.026	0.107	-0.028	0.573	0.519	-0.125
171.7	0.349	0.570	0.586	0.510	0.204	-0.024	0.105	-0.028	0.579	0.516	-0.117
173.1	0.350	0.573	0.586	0.509	0.205	-0.025	0.106	-0.026	0.585	0.513	-0.112
174.5	0.356	0.577	0.588	0.511	0.203	-0.028	0.109	-0.026	0.588	0.516	-0.114
175.9	0.359	0.580	0.592	0.514	0.204	-0.029	0.111	-0.026	0.594	0.519	-0.109
177.3	0.361	0.580	0.593	0.515	0.204	-0.029	0.114	-0.029	0.599	0.519	-0.108
178.7	0.365	0.583	0.594	0.516	0.204	-0.027	0.114	-0.029	0.606	0.525	-0.106
180.1	0.370	0.584	0.595	0.515	0.206	-0.028	0.116	-0.027	0.615	0.529	-0.104
181.5	0.371	0.585	0.598	0.520	0.209	-0.031	0.120	-0.031	0.627	0.534	-0.099
182.9	0.375	0.592	0.603	0.524	0.214	-0.031	0.126	-0.031	0.637	0.544	-0.084
184.3	0.383	0.598	0.608	0.528	0.216	-0.030	0.133	-0.024	0.647	0.554	-0.071

Table 7. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.388	0.603	0.613	0.532	0.216	-0.030	0.135	-0.022	0.659	0.562	-0.068
187.2	0.394	0.610	0.618	0.536	0.217	-0.026	0.136	-0.025	0.672	0.574	-0.061
188.6	0.403	0.615	0.622	0.540	0.222	-0.025	0.136	-0.024	0.687	0.589	-0.058
190.0	0.408	0.619	0.626	0.542	0.226	-0.026	0.137	-0.022	0.705	0.606	-0.053
191.4	0.414	0.628	0.633	0.549	0.229	-0.027	0.137	-0.023	0.724	0.627	-0.043
192.8	0.423	0.636	0.641	0.558	0.232	-0.028	0.138	-0.022	0.739	0.644	-0.034
194.2	0.430	0.643	0.649	0.564	0.232	-0.030	0.139	-0.018	0.757	0.666	-0.021
195.6	0.439	0.653	0.657	0.570	0.238	-0.029	0.137	-0.013	0.775	0.693	-0.005
197.0	0.447	0.663	0.664	0.578	0.242	-0.029	0.137	-0.012	0.795	0.716	0.014
198.4	0.455	0.673	0.674	0.587	0.244	-0.032	0.139	-0.011	0.812	0.741	0.026
199.8	0.465	0.685	0.686	0.596	0.245	-0.035	0.137	-0.009	0.832	0.772	0.040
201.2	0.474	0.696	0.699	0.608	0.246	-0.034	0.136	-0.007	0.848	0.802	0.058
202.6	0.478	0.702	0.710	0.617	0.250	-0.032	0.129	-0.006	0.861	0.828	0.079
204.0	0.485	0.710	0.717	0.623	0.253	-0.036	0.130	-0.003	0.876	0.841	0.088
205.4	0.498	0.725	0.727	0.629	0.253	-0.035	0.129	0.001	0.883	0.861	0.085
206.8	0.505	0.736	0.737	0.637	0.251	-0.035	0.126	0.007	0.890	0.882	0.091
208.3	0.514	0.748	0.747	0.643	0.252	-0.038	0.123	0.009	0.898	0.886	0.072
209.7	0.526	0.760	0.756	0.651	0.255	-0.040	0.118	0.010	0.900	0.904	0.046
211.1	0.533	0.767	0.760	0.658	0.258	-0.042	0.113	0.012	0.899	0.913	0.042
212.5	0.542	0.776	0.769	0.664	0.261	-0.041	0.109	0.016	0.902	0.903	0.046
213.9	0.545	0.783	0.779	0.674	0.261	-0.040	0.103	0.021	0.898	0.913	0.059
215.3	0.546	0.787	0.785	0.680	0.261	-0.040	0.097	0.027	0.883	0.902	0.039
216.7	0.543	0.785	0.789	0.682	0.261	-0.042	0.092	0.028	0.872	0.884	0.025
218.1	0.543	0.780	0.790	0.684	0.262	-0.044	0.085	0.027	0.866	0.870	0.010
219.5	0.540	0.778	0.788	0.686	0.262	-0.044	0.081	0.030	0.847	0.836	-0.034
220.9	0.540	0.778	0.786	0.684	0.261	-0.041	0.079	0.031	0.827	0.807	-0.050
222.3	0.538	0.775	0.783	0.680	0.259	-0.042	0.077	0.033	0.812	0.800	-0.038
223.7	0.524	0.763	0.781	0.677	0.256	-0.045	0.075	0.036	0.787	0.789	-0.029
225.1	0.512	0.750	0.769	0.671	0.253	-0.043	0.071	0.040	0.768	0.764	-0.036
226.5	0.504	0.740	0.754	0.659	0.252	-0.044	0.067	0.040	0.761	0.738	-0.044
227.9	0.497	0.731	0.745	0.649	0.249	-0.042	0.066	0.034	0.747	0.713	-0.053
229.3	0.486	0.719	0.738	0.643	0.245	-0.041	0.066	0.033	0.728	0.695	-0.056
230.8	0.477	0.710	0.728	0.636	0.242	-0.041	0.064	0.034	0.707	0.680	-0.071
232.2	0.464	0.695	0.717	0.628	0.239	-0.040	0.061	0.034	0.691	0.667	-0.076
233.6	0.441	0.672	0.708	0.620	0.237	-0.041	0.061	0.035	0.680	0.651	-0.076
235.0	0.431	0.661	0.693	0.612	0.236	-0.043	0.061	0.033	0.669	0.633	-0.076
236.4	0.414	0.644	0.682	0.601	0.232	-0.045	0.062	0.030	0.654	0.617	-0.085
237.8	0.398	0.628	0.669	0.592	0.230	-0.044	0.061	0.025	0.643	0.605	-0.090
239.2	0.388	0.618	0.655	0.581	0.228	-0.044	0.060	0.023	0.631	0.598	-0.085
240.6	0.380	0.607	0.643	0.570	0.224	-0.045	0.059	0.020	0.621	0.590	-0.075
242.0	0.371	0.597	0.634	0.561	0.222	-0.047	0.059	0.019	0.612	0.581	-0.072
243.4	0.369	0.590	0.627	0.556	0.219	-0.050	0.059	0.018	0.608	0.569	-0.078
244.8	0.364	0.585	0.620	0.551	0.215	-0.049	0.058	0.016	0.600	0.561	-0.078
246.2	0.357	0.578	0.616	0.546	0.212	-0.048	0.060	0.013	0.592	0.553	-0.077

Table 7. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.351	0.571	0.609	0.540	0.212	-0.050	0.061	0.011	0.587	0.547	-0.077
249.0	0.344	0.565	0.601	0.534	0.212	-0.050	0.061	0.011	0.580	0.540	-0.071
250.4	0.341	0.560	0.597	0.531	0.210	-0.049	0.068	0.003	0.577	0.536	-0.069
251.8	0.338	0.558	0.597	0.528	0.210	-0.052	0.070	0.000	0.576	0.534	-0.063
253.3	0.337	0.557	0.593	0.529	0.210	-0.051	0.073	-0.002	0.572	0.531	-0.060
254.7	0.337	0.555	0.592	0.529	0.212	-0.052	0.076	-0.004	0.571	0.531	-0.062
256.1	0.333	0.553	0.592	0.527	0.213	-0.051	0.076	-0.003	0.571	0.531	-0.060
257.5	0.331	0.553	0.590	0.524	0.214	-0.050	0.078	-0.003	0.570	0.528	-0.052
258.9	0.332	0.552	0.587	0.522	0.216	-0.051	0.080	-0.002	0.568	0.527	-0.047
260.3	0.329	0.551	0.588	0.524	0.216	-0.052	0.083	-0.005	0.567	0.529	-0.039
261.7	0.328	0.552	0.590	0.525	0.216	-0.053	0.087	-0.010	0.571	0.527	-0.035
263.1	0.333	0.556	0.593	0.524	0.219	-0.053	0.090	-0.014	0.575	0.529	-0.030
264.5	0.338	0.561	0.597	0.529	0.221	-0.053	0.088	-0.009	0.578	0.531	-0.020
265.9	0.341	0.564	0.600	0.532	0.223	-0.056	0.092	-0.003	0.582	0.534	-0.024
267.3	0.344	0.568	0.601	0.533	0.226	-0.057	0.097	-0.009	0.588	0.538	-0.025
268.7	0.348	0.570	0.604	0.534	0.228	-0.058	0.099	-0.013	0.592	0.543	-0.020
270.1	0.352	0.574	0.610	0.538	0.229	-0.058	0.104	-0.011	0.598	0.551	-0.018
271.5	0.355	0.580	0.616	0.544	0.234	-0.058	0.108	-0.015	0.609	0.558	-0.011
272.9	0.361	0.586	0.620	0.546	0.238	-0.058	0.108	-0.015	0.617	0.564	-0.004
274.3	0.368	0.591	0.625	0.552	0.240	-0.059	0.112	-0.013	0.625	0.571	0.000
275.8	0.372	0.597	0.632	0.556	0.242	-0.061	0.115	-0.011	0.634	0.578	0.007
277.2	0.380	0.604	0.639	0.562	0.243	-0.058	0.115	-0.007	0.647	0.590	0.013
278.6	0.388	0.611	0.646	0.569	0.250	-0.057	0.116	-0.009	0.660	0.603	0.020
280.0	0.393	0.617	0.651	0.570	0.252	-0.060	0.115	-0.012	0.673	0.616	0.028
281.4	0.400	0.626	0.656	0.577	0.254	-0.061	0.116	-0.012	0.685	0.632	0.040
282.8	0.408	0.634	0.668	0.587	0.259	-0.064	0.118	-0.007	0.700	0.649	0.052
284.2	0.415	0.645	0.680	0.597	0.263	-0.064	0.117	-0.003	0.714	0.665	0.064
285.6	0.423	0.658	0.687	0.604	0.267	-0.064	0.119	-0.004	0.725	0.683	0.079
287.0	0.434	0.671	0.699	0.612	0.272	-0.065	0.117	-0.004	0.743	0.709	0.088
288.4	0.446	0.685	0.713	0.624	0.277	-0.065	0.115	-0.003	0.759	0.724	0.104
289.8	0.460	0.700	0.724	0.633	0.281	-0.066	0.114	-0.001	0.773	0.744	0.120
291.2	0.469	0.713	0.735	0.645	0.285	-0.066	0.111	-0.001	0.785	0.769	0.131
292.6	0.480	0.725	0.747	0.656	0.291	-0.064	0.110	0.001	0.796	0.790	0.145
294.0	0.490	0.738	0.761	0.667	0.296	-0.061	0.111	0.004	0.807	0.803	0.156
295.4	0.501	0.752	0.772	0.676	0.300	-0.064	0.108	0.006	0.817	0.811	0.161
296.8	0.512	0.767	0.784	0.683	0.302	-0.064	0.104	0.008	0.823	0.825	0.164
298.3	0.525	0.783	0.798	0.694	0.303	-0.064	0.101	0.008	0.824	0.834	0.166
299.7	0.539	0.796	0.808	0.702	0.306	-0.065	0.096	0.014	0.827	0.848	0.169
301.1	0.548	0.807	0.814	0.710	0.307	-0.066	0.093	0.021	0.831	0.844	0.164
302.5	0.562	0.822	0.825	0.718	0.312	-0.064	0.090	0.021	0.831	0.833	0.157
303.9	0.568	0.831	0.836	0.727	0.315	-0.063	0.088	0.021	0.825	0.836	0.159
305.3	0.570	0.835	0.840	0.735	0.314	-0.066	0.087	0.020	0.811	0.827	0.125
306.7	0.569	0.839	0.847	0.737	0.316	-0.067	0.082	0.024	0.808	0.823	0.137
308.1	0.564	0.835	0.849	0.741	0.322	-0.067	0.077	0.028	0.797	0.806	0.114

Table 7. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.566	0.838	0.847	0.742	0.323	-0.065	0.073	0.030	0.781	0.776	0.071
310.9	0.569	0.840	0.842	0.739	0.320	-0.065	0.071	0.031	0.770	0.768	0.077
312.3	0.562	0.832	0.840	0.734	0.317	-0.066	0.070	0.028	0.752	0.769	0.063
313.7	0.551	0.823	0.836	0.733	0.315	-0.066	0.065	0.027	0.734	0.755	0.050
315.1	0.537	0.809	0.821	0.723	0.312	-0.066	0.061	0.030	0.725	0.733	0.028
316.5	0.525	0.795	0.809	0.709	0.310	-0.066	0.058	0.029	0.716	0.710	0.001
317.9	0.515	0.785	0.796	0.700	0.305	-0.065	0.053	0.027	0.702	0.695	-0.013
319.3	0.504	0.775	0.788	0.690	0.301	-0.063	0.051	0.022	0.686	0.676	-0.036
320.8	0.498	0.763	0.777	0.684	0.295	-0.062	0.051	0.021	0.671	0.663	-0.053
322.2	0.484	0.749	0.762	0.673	0.292	-0.063	0.052	0.022	0.659	0.651	-0.065
323.6	0.464	0.730	0.753	0.661	0.290	-0.064	0.052	0.019	0.647	0.637	-0.080
325.0	0.453	0.713	0.738	0.652	0.289	-0.067	0.048	0.021	0.639	0.622	-0.088
326.4	0.434	0.695	0.721	0.640	0.285	-0.066	0.045	0.019	0.628	0.611	-0.095
327.8	0.417	0.675	0.708	0.629	0.280	-0.065	0.046	0.013	0.617	0.603	-0.101
329.2	0.404	0.660	0.690	0.616	0.276	-0.065	0.046	0.008	0.609	0.594	-0.103
330.6	0.397	0.651	0.677	0.601	0.272	-0.065	0.047	0.006	0.602	0.588	-0.103
332.0	0.390	0.643	0.669	0.592	0.269	-0.065	0.047	0.003	0.597	0.581	-0.105
333.4	0.381	0.635	0.661	0.586	0.266	-0.065	0.047	0.007	0.591	0.572	-0.110
334.8	0.377	0.631	0.654	0.583	0.263	-0.063	0.049	0.008	0.586	0.561	-0.106
336.2	0.370	0.620	0.648	0.578	0.261	-0.063	0.051	0.009	0.581	0.554	-0.106
337.6	0.362	0.609	0.637	0.570	0.257	-0.062	0.049	0.008	0.575	0.548	-0.112
339.0	0.357	0.604	0.630	0.562	0.258	-0.061	0.048	0.007	0.570	0.541	-0.113
340.4	0.355	0.601	0.625	0.556	0.255	-0.062	0.050	0.005	0.569	0.536	-0.112
341.8	0.353	0.598	0.624	0.555	0.251	-0.064	0.052	0.002	0.567	0.532	-0.109
343.3	0.350	0.595	0.619	0.552	0.251	-0.063	0.052	-0.003	0.565	0.526	-0.099
344.7	0.349	0.591	0.615	0.550	0.249	-0.063	0.052	-0.011	0.566	0.521	-0.090
346.1	0.347	0.587	0.614	0.547	0.250	-0.061	0.052	-0.011	0.565	0.518	-0.096
347.5	0.345	0.587	0.610	0.543	0.250	-0.061	0.054	-0.011	0.564	0.514	-0.095
348.9	0.348	0.584	0.607	0.541	0.249	-0.062	0.056	-0.011	0.561	0.511	-0.089
350.3	0.348	0.581	0.606	0.542	0.249	-0.062	0.058	-0.010	0.563	0.510	-0.084
351.7	0.348	0.583	0.606	0.540	0.249	-0.063	0.061	-0.016	0.568	0.506	-0.081
353.1	0.353	0.586	0.606	0.539	0.249	-0.065	0.062	-0.016	0.570	0.506	-0.078
354.5	0.356	0.588	0.609	0.541	0.249	-0.067	0.062	-0.015	0.575	0.505	-0.072
355.9	0.357	0.591	0.612	0.544	0.249	-0.068	0.065	-0.020	0.580	0.508	-0.066
357.3	0.361	0.594	0.613	0.543	0.250	-0.071	0.068	-0.023	0.583	0.511	-0.058
358.7	0.364	0.595	0.614	0.544	0.252	-0.073	0.071	-0.021	0.587	0.514	-0.051

Table 8. Modified unsteady pressure coefficients around the body at x/l = 0.90. $C_T/\sigma = 0.0639$, $\mu = 0.012$, $\alpha_s = 0.0°$, $\theta = 11.8°$, $A_1 = -0.1°$, $B_1 = 0.2°$.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	-0.010	-0.033	0.233	0.201	0.178	0.074	-0.073	0.066	-0.319	0.080
1.5	-0.012	-0.037	0.229	0.197	0.173	0.074	-0.069	0.059	-0.320	0.080
2.9	-0.013	-0.043	0.226	0.192	0.172	0.075	-0.068	0.062	-0.321	0.079
4.3	-0.016	-0.044	0.226	0.191	0.173	0.079	-0.068	0.060	-0.325	0.079
5.8	-0.019	-0.044	0.227	0.193	0.174	0.082	-0.064	0.059	-0.332	0.079
7.2	-0.022	-0.048	0.228	0.190	0.167	0.082	-0.063	0.060	-0.335	0.078
8.6	-0.026	-0.048	0.224	0.187	0.158	0.077	-0.064	0.062	-0.336	0.078
10.0	-0.029	-0.050	0.218	0.185	0.156	0.075	-0.065	0.060	-0.343	0.077
11.4	-0.031	-0.055	0.218	0.184	0.155	0.077	-0.063	0.061	-0.348	0.077
12.8	-0.029	-0.057	0.216	0.184	0.151	0.080	-0.058	0.065	-0.348	0.077
14.2	-0.028	-0.060	0.215	0.180	0.149	0.078	-0.055	0.063	-0.349	0.076
15.6	-0.028	-0.060	0.212	0.175	0.148	0.074	-0.054	0.067	-0.350	0.076
17.0	-0.028	-0.062	0.213	0.173	0.148	0.079	-0.051	0.066	-0.350	0.076
18.4	-0.031	-0.066	0.214	0.170	0.146	0.083	-0.049	0.060	-0.353	0.075
19.8	-0.032	-0.067	0.208	0.168	0.140	0.081	-0.049	0.063	-0.354	0.075
21.2	-0.034	-0.070	0.200	0.165	0.135	0.076	-0.048	0.063	-0.354	0.075
22.6	-0.038	-0.077	0.194	0.161	0.133	0.075	-0.049	0.064	-0.353	0.075
24.0	-0.039	-0.079	0.192	0.158	0.134	0.077	-0.047	0.075	-0.354	0.074
25.4	-0.039	-0.079	0.192	0.155	0.133	0.078	-0.046	0.072	-0.350	0.074
26.8	-0.038	-0.080	0.191	0.153	0.131	0.072	-0.051	0.070	-0.346	0.074
28.3	-0.037	-0.077	0.188	0.150	0.129	0.068	-0.049	0.076	-0.342	0.074
29.7	-0.038	-0.070	0.184	0.148	0.127	0.068	-0.048	0.079	-0.340	0.074
31.1	-0.039	-0.070	0.179	0.147	0.127	0.067	-0.044	0.083	-0.338	0.074
32.5	-0.041	-0.072	0.179	0.144	0.124	0.062	-0.040	0.081	-0.340	0.074
33.9	-0.042	-0.075	0.179	0.143	0.123	0.058	-0.041	0.076	-0.338	0.074
35.3	-0.043	-0.074	0.177	0.142	0.124	0.053	-0.042	0.080	-0.333	0.074
36.7	-0.041	-0.071	0.179	0.141	0.122	0.052	-0.042	0.083	-0.336	0.074
38.1	-0.042	-0.066	0.178	0.139	0.118	0.051	-0.046	0.084	-0.333	0.074
39.5	-0.043	-0.068	0.175	0.140	0.117	0.048	-0.051	0.086	-0.333	0.074
40.9	-0.042	-0.069	0.176	0.138	0.116	0.046	-0.053	0.087	-0.331	0.073
42.3	-0.040	-0.065	0.173	0.137	0.112	0.045	-0.056	0.079	-0.331	0.073
43.7	-0.039	-0.062	0.174	0.137	0.112	0.046	-0.055	0.074	-0.333	0.072
45.1	-0.036	-0.058	0.176	0.138	0.111	0.047	-0.055	0.081	-0.330	0.072
46.5	-0.033	-0.057	0.172	0.135	0.112	0.043	-0.060	0.078	-0.324	0.072
47.9	-0.030	-0.057	0.173	0.134	0.114	0.043	-0.065	0.071	-0.329	0.072
49.3	-0.027	-0.056	0.171	0.139	0.115	0.046	-0.061	0.071	-0.331	0.072
50.8	-0.025	-0.054	0.169	0.140	0.118	0.049	-0.059	0.066	-0.326	0.072
52.2	-0.023	-0.051	0.177	0.144	0.123	0.052	-0.060	0.066	-0.322	0.072
53.6	-0.022	-0.048	0.182	0.150	0.124	0.051	-0.062	0.068	-0.319	0.073
55.0	-0.022	-0.042	0.188	0.157	0.125	0.048	-0.068	0.065	-0.317	0.073
56.4	-0.021	-0.040	0.188	0.158	0.122	0.051	-0.066	0.061	-0.316	0.074
57.8	-0.019	-0.035	0.190	0.159	0.122	0.054	-0.068	0.060	-0.315	0.074
59.2	-0.017	-0.032	0.198	0.162	0.128	0.058	-0.073	0.056	-0.316	0.073
60.6	-0.015	-0.034	0.197	0.164	0.134	0.062	-0.074	0.058	-0.317	0.074

Table 8. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	-0.012	-0.031	0.200	0.169	0.140	0.063	-0.072	0.059	-0.316	0.074
63.4	-0.010	-0.024	0.207	0.173	0.146	0.066	-0.074	0.053	-0.315	0.074
64.8	-0.013	-0.020	0.211	0.179	0.147	0.070	-0.077	0.049	-0.318	0.074
66.2	-0.014	-0.016	0.215	0.186	0.149	0.070	-0.076	0.048	-0.318	0.074
67.6	-0.012	-0.013	0.214	0.188	0.149	0.071	-0.076	0.051	-0.315	0.075
69.0	-0.009	-0.011	0.219	0.194	0.153	0.072	-0.072	0.050	-0.311	0.075
70.4	-0.009	-0.006	0.224	0.199	0.160	0.077	-0.071	0.046	-0.309	0.076
71.8	-0.008	-0.006	0.224	0.202	0.163	0.078	-0.071	0.041	-0.307	0.076
73.3	-0.007	-0.006	0.231	0.204	0.163	0.077	-0.069	0.038	-0.309	0.076
74.7	-0.008	-0.004	0.237	0.207	0.165	0.076	-0.072	0.039	-0.311	0.077
76.1	-0.009	-0.006	0.236	0.209	0.166	0.078	-0.075	0.038	-0.310	0.077
77.5	-0.007	-0.006	0.240	0.211	0.170	0.079	-0.076	0.037	-0.310	0.077
78.9	-0.008	-0.006	0.243	0.212	0.175	0.081	-0.075	0.033	-0.310	0.078
80.3	-0.010	-0.004	0.245	0.214	0.178	0.084	-0.075	0.030	-0.313	0.078
81.7	-0.009	-0.004	0.246	0.218	0.180	0.084	-0.074	0.036	-0.315	0.078
83.1	-0.009	-0.009	0.248	0.219	0.182	0.087	-0.075	0.036	-0.314	0.078
84.5	-0.009	-0.010	0.249	0.222	0.183	0.088	-0.075	0.033	-0.314	0.078
85.9	-0.010	-0.010	0.255	0.225	0.186	0.090	-0.073	0.032	-0.317	0.079
87.3	-0.009	-0.011	0.257	0.227	0.187	0.098	-0.073	0.033	-0.315	0.079
88.7	-0.009	-0.014	0.258	0.225	0.189	0.098	-0.073	0.035	-0.315	0.080
90.1	-0.010	-0.019	0.260	0.223	0.193	0.097	-0.070	0.035	-0.317	0.080
91.5	-0.011	-0.024	0.258	0.223	0.194	0.099	-0.067	0.037	-0.318	0.081
92.9	-0.010	-0.023	0.258	0.223	0.197	0.103	-0.063	0.037	-0.319	0.081
94.3	-0.011	-0.026	0.257	0.220	0.198	0.105	-0.057	0.038	-0.321	0.082
95.8	-0.011	-0.024	0.263	0.220	0.197	0.107	-0.052	0.039	-0.322	0.083
97.2	-0.013	-0.028	0.265	0.222	0.194	0.110	-0.049	0.040	-0.323	0.083
98.6	-0.014	-0.031	0.259	0.221	0.193	0.110	-0.049	0.040	-0.323	0.083
100.0	-0.013	-0.031	0.256	0.219	0.191	0.112	-0.044	0.041	-0.323	0.083
101.4	-0.012	-0.035	0.254	0.217	0.186	0.112	-0.041	0.042	-0.325	0.083
102.8	-0.012	-0.035	0.251	0.216	0.183	0.114	-0.039	0.042	-0.327	0.083
104.2	-0.013	-0.041	0.244	0.213	0.181	0.114	-0.036	0.043	-0.327	0.084
105.6	-0.014	-0.047	0.239	0.209	0.181	0.116	-0.034	0.049	-0.329	0.084
107.0	-0.016	-0.048	0.239	0.206	0.179	0.118	-0.034	0.054	-0.332	0.084
108.4	-0.017	-0.049	0.237	0.202	0.173	0.115	-0.036	0.054	-0.330	0.084
109.8	-0.018	-0.050	0.233	0.200	0.167	0.111	-0.044	0.052	-0.330	0.084
111.2	-0.019	-0.052	0.227	0.194	0.163	0.108	-0.045	0.055	-0.334	0.084
112.6	-0.022	-0.056	0.219	0.187	0.160	0.109	-0.038	0.057	-0.335	0.083
114.0	-0.023	-0.059	0.219	0.184	0.158	0.108	-0.036	0.061	-0.332	0.083
115.4	-0.025	-0.061	0.220	0.183	0.155	0.104	-0.033	0.061	-0.332	0.083
116.8	-0.027	-0.055	0.218	0.182	0.152	0.101	-0.032	0.064	-0.335	0.083
118.3	-0.028	-0.050	0.214	0.179	0.152	0.099	-0.031	0.069	-0.330	0.083
119.7	-0.030	-0.052	0.210	0.176	0.149	0.095	-0.034	0.073	-0.330	0.083
121.1	-0.033	-0.056	0.205	0.168	0.145	0.091	-0.037	0.073	-0.332	0.082
122.5	-0.034	-0.055	0.200	0.164	0.143	0.088	-0.039	0.071	-0.330	0.082

Table 8. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	-0.037	-0.055	0.199	0.161	0.142	0.084	-0.039	0.071	-0.329	0.082
125.3	-0.041	-0.056	0.202	0.160	0.140	0.082	-0.040	0.073	-0.326	0.082
126.7	-0.041	-0.058	0.201	0.159	0.136	0.081	-0.041	0.082	-0.327	0.082
128.1	-0.041	-0.054	0.199	0.159	0.134	0.078	-0.046	0.087	-0.322	0.082
129.5	-0.041	-0.055	0.197	0.158	0.134	0.075	-0.050	0.083	-0.323	0.082
130.9	-0.042	-0.051	0.196	0.156	0.133	0.074	-0.052	0.080	-0.327	0.082
132.3	-0.042	-0.047	0.197	0.156	0.133	0.074	-0.052	0.081	-0.325	0.082
133.7	-0.042	-0.049	0.203	0.157	0.134	0.072	-0.051	0.083	-0.325	0.083
135.1	-0.042	-0.046	0.205	0.156	0.132	0.069	-0.057	0.083	-0.322	0.083
136.5	-0.042	-0.042	0.206	0.157	0.130	0.068	-0.062	0.081	-0.316	0.084
137.9	-0.042	-0.042	0.205	0.159	0.131	0.066	-0.063	0.080	-0.314	0.083
139.3	-0.038	-0.039	0.205	0.159	0.134	0.067	-0.064	0.081	-0.316	0.083
140.8	-0.036	-0.037	0.209	0.160	0.134	0.070	-0.065	0.080	-0.313	0.083
142.2	-0.034	-0.037	0.215	0.164	0.132	0.069	-0.066	0.076	-0.311	0.083
143.6	-0.030	-0.033	0.216	0.169	0.132	0.067	-0.062	0.075	-0.311	0.083
145.0	-0.028	-0.032	0.218	0.174	0.134	0.068	-0.062	0.072	-0.308	0.083
146.4	-0.026	-0.029	0.222	0.178	0.134	0.070	-0.061	0.075	-0.304	0.083
147.8	-0.023	-0.021	0.223	0.181	0.135	0.075	-0.062	0.074	-0.306	0.083
149.2	-0.019	-0.019	0.224	0.187	0.140	0.077	-0.061	0.072	-0.304	0.083
150.6	-0.015	-0.015	0.225	0.192	0.144	0.076	-0.055	0.070	-0.302	0.083
152.0	-0.011	-0.009	0.229	0.194	0.148	0.078	-0.053	0.068	-0.301	0.083
153.4	-0.007	0.000	0.239	0.198	0.153	0.082	-0.052	0.068	-0.299	0.082
154.8	-0.008	0.003	0.245	0.202	0.158	0.083	-0.052	0.061	-0.304	0.082
156.2	-0.008	0.005	0.251	0.207	0.162	0.086	-0.048	0.060	-0.307	0.083
157.6	-0.007	0.008	0.261	0.216	0.164	0.085	-0.044	0.064	-0.301	0.083
159.0	-0.008	0.011	0.267	0.221	0.164	0.086	-0.042	0.064	-0.296	0.083
160.4	-0.006	0.014	0.269	0.225	0.169	0.091	-0.041	0.066	-0.300	0.083
161.8	-0.004	0.012	0.271	0.229	0.174	0.095	-0.042	0.063	-0.302	0.083
163.3	-0.002	0.013	0.277	0.235	0.178	0.097	-0.041	0.055	-0.302	0.084
164.7	-0.004	0.015	0.280	0.239	0.181	0.097	-0.041	0.055	-0.303	0.084
166.1	-0.007	0.019	0.281	0.239	0.180	0.099	-0.041	0.057	-0.306	0.084
167.5	-0.008	0.020	0.283	0.242	0.183	0.100	-0.042	0.057	-0.308	0.085
168.9	-0.010	0.016	0.282	0.244	0.185	0.104	-0.044	0.059	-0.308	0.086
170.3	-0.010	0.015	0.284	0.249	0.188	0.107	-0.048	0.057	-0.310	0.086
171.7	-0.009	0.015	0.284	0.253	0.194	0.105	-0.050	0.054	-0.309	0.087
173.1	-0.010	0.017	0.282	0.255	0.198	0.106	-0.048	0.054	-0.309	0.088
174.5	-0.012	0.017	0.283	0.258	0.201	0.109	-0.045	0.054	-0.312	0.089
175.9	-0.013	0.016	0.285	0.258	0.203	0.111	-0.045	0.051	-0.313	0.090
177.3	-0.015	0.015	0.283	0.259	0.201	0.114	-0.043	0.052	-0.314	0.090
178.7	-0.019	0.013	0.283	0.258	0.206	0.114	-0.046	0.050	-0.317	0.091
180.1	-0.023	0.015	0.281	0.259	0.209	0.116	-0.048	0.048	-0.318	0.091
181.5	-0.024	0.017	0.274	0.260	0.211	0.120	-0.039	0.047	-0.321	0.091
182.9	-0.023	0.017	0.274	0.258	0.216	0.126	-0.032	0.050	-0.321	0.092
184.3	-0.023	0.014	0.275	0.258	0.217	0.133	-0.027	0.051	-0.325	0.092

Table 8. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	-0.023	0.007	0.271	0.260	0.213	0.135	-0.024	0.054	-0.330	0.091
187.2	-0.025	0.005	0.272	0.263	0.212	0.136	-0.025	0.053	-0.328	0.091
188.6	-0.029	0.003	0.269	0.257	0.213	0.136	-0.024	0.054	-0.326	0.091
190.0	-0.029	0.000	0.270	0.253	0.214	0.137	-0.024	0.059	-0.328	0.091
191.4	-0.029	0.001	0.269	0.252	0.211	0.137	-0.025	0.057	-0.336	0.091
192.8	-0.029	-0.004	0.269	0.249	0.209	0.138	-0.025	0.063	-0.335	0.091
194.2	-0.030	-0.011	0.261	0.245	0.207	0.139	-0.021	0.071	-0.338	0.091
195.6	-0.031	-0.016	0.257	0.242	0.204	0.137	-0.017	0.072	-0.342	0.090
197.0	-0.034	-0.014	0.261	0.240	0.200	0.137	-0.019	0.075	-0.343	0.090
198.4	-0.037	-0.009	0.262	0.237	0.196	0.139	-0.019	0.080	-0.344	0.089
199.8	-0.038	-0.011	0.257	0.230	0.195	0.137	-0.018	0.082	-0.343	0.089
201.2	-0.039	-0.016	0.255	0.221	0.190	0.136	-0.020	0.087	-0.345	0.088
202.6	-0.040	-0.022	0.246	0.215	0.184	0.129	-0.023	0.090	-0.346	0.088
204.0	-0.042	-0.027	0.239	0.209	0.180	0.130	-0.023	0.089	-0.339	0.087
205.4	-0.044	-0.029	0.237	0.202	0.174	0.129	-0.023	0.088	-0.340	0.087
206.8	-0.044	-0.032	0.230	0.195	0.169	0.126	-0.024	0.090	-0.340	0.087
208.3	-0.044	-0.036	0.230	0.192	0.167	0.123	-0.025	0.092	-0.343	0.087
209.7	-0.045	-0.044	0.229	0.188	0.161	0.118	-0.026	0.097	-0.341	0.087
211.1	-0.046	-0.047	0.221	0.181	0.152	0.113	-0.028	0.101	-0.333	0.087
212.5	-0.046	-0.044	0.218	0.178	0.147	0.109	-0.029	0.098	-0.335	0.088
213.9	-0.046	-0.048	0.216	0.177	0.145	0.103	-0.031	0.100	-0.333	0.089
215.3	-0.046	-0.050	0.211	0.177	0.144	0.097	-0.034	0.108	-0.333	0.089
216.7	-0.044	-0.047	0.215	0.175	0.138	0.092	-0.037	0.114	-0.333	0.090
218.1	-0.042	-0.041	0.216	0.174	0.128	0.085	-0.042	0.111	-0.333	0.090
219.5	-0.039	-0.042	0.210	0.172	0.123	0.081	-0.043	0.110	-0.331	0.089
220.9	-0.036	-0.049	0.208	0.170	0.114	0.079	-0.042	0.109	-0.332	0.089
222.3	-0.033	-0.046	0.209	0.165	0.116	0.077	-0.045	0.112	-0.334	0.089
223.7	-0.030	-0.040	0.210	0.164	0.116	0.075	-0.051	0.114	-0.331	0.089
225.1	-0.030	-0.035	0.211	0.169	0.113	0.071	-0.055	0.113	-0.321	0.089
226.5	-0.031	-0.038	0.209	0.171	0.115	0.067	-0.058	0.110	-0.318	0.089
227.9	-0.030	-0.036	0.207	0.168	0.118	0.066	-0.059	0.105	-0.318	0.089
229.3	-0.029	-0.039	0.204	0.168	0.122	0.066	-0.055	0.103	-0.317	0.088
230.8	-0.028	-0.045	0.200	0.169	0.121	0.064	-0.053	0.102	-0.314	0.088
232.2	-0.028	-0.039	0.201	0.171	0.122	0.061	-0.054	0.100	-0.316	0.088
233.6	-0.028	-0.042	0.208	0.173	0.123	0.061	-0.057	0.098	-0.315	0.087
235.0	-0.029	-0.033	0.214	0.179	0.123	0.061	-0.063	0.099	-0.311	0.087
236.4	-0.031	-0.031	0.219	0.181	0.128	0.062	-0.059	0.099	-0.310	0.086
237.8	-0.031	-0.026	0.221	0.179	0.131	0.061	-0.057	0.094	-0.311	0.085
239.2	-0.031	-0.015	0.227	0.183	0.129	0.060	-0.060	0.093	-0.309	0.084
240.6	-0.032	-0.019	0.230	0.188	0.127	0.059	-0.059	0.088	-0.311	0.084
242.0	-0.034	-0.020	0.229	0.191	0.128	0.059	-0.056	0.087	-0.313	0.083
243.4	-0.034	-0.018	0.227	0.194	0.131	0.059	-0.060	0.088	-0.304	0.082
244.8	-0.037	-0.012	0.235	0.199	0.134	0.058	-0.062	0.083	-0.309	0.081
246.2	-0.038	-0.008	0.240	0.200	0.137	0.060	-0.062	0.084	-0.311	0.081

Table 8. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	-0.037	-0.008	0.244	0.205	0.142	0.061	-0.062	0.085	-0.312	0.081
249.0	-0.036	-0.012	0.250	0.209	0.146	0.061	-0.063	0.090	-0.312	0.080
250.4	-0.034	-0.014	0.253	0.209	0.152	0.068	-0.065	0.084	-0.313	0.079
251.8	-0.031	-0.014	0.257	0.213	0.159	0.070	-0.067	0.074	-0.317	0.079
253.3	-0.029	-0.009	0.255	0.217	0.159	0.073	-0.069	0.072	-0.317	0.080
254.7	-0.028	-0.005	0.255	0.218	0.162	0.076	-0.068	0.071	-0.316	0.080
256.1	-0.028	-0.004	0.259	0.219	0.168	0.076	-0.067	0.072	-0.317	0.081
257.5	-0.025	-0.002	0.260	0.219	0.174	0.078	-0.067	0.069	-0.321	0.081
258.9	-0.022	0.001	0.264	0.221	0.178	0.080	-0.067	0.064	-0.321	0.081
260.3	-0.020	0.003	0.265	0.226	0.182	0.083	-0.066	0.065	-0.325	0.081
261.7	-0.018	0.002	0.273	0.230	0.187	0.087	-0.064	0.070	-0.327	0.081
263.1	-0.015	0.001	0.278	0.231	0.191	0.090	-0.061	0.075	-0.331	0.081
264.5	-0.013	0.001	0.276	0.231	0.197	0.088	-0.058	0.074	-0.336	0.081
265.9	-0.010	0.005	0.274	0.232	0.200	0.092	-0.055	0.072	-0.335	0.081
267.3	-0.007	0.008	0.268	0.233	0.199	0.097	-0.050	0.070	-0.340	0.082
268.7	-0.006	0.007	0.269	0.231	0.201	0.099	-0.050	0.067	-0.340	0.082
270.1	-0.005	0.005	0.267	0.232	0.209	0.104	-0.051	0.067	-0.345	0.082
271.5	-0.005	0.003	0.264	0.231	0.214	0.108	-0.049	0.068	-0.349	0.082
272.9	-0.005	-0.002	0.262	0.230	0.216	0.108	-0.048	0.075	-0.351	0.083
274.3	-0.007	-0.004	0.261	0.230	0.216	0.112	-0.044	0.074	-0.352	0.083
275.8	-0.008	-0.004	0.260	0.228	0.217	0.115	-0.039	0.064	-0.353	0.082
277.2	-0.011	-0.007	0.256	0.224	0.217	0.115	-0.039	0.071	-0.356	0.082
278.6	-0.013	-0.011	0.247	0.218	0.214	0.116	-0.035	0.077	-0.360	0.083
280.0	-0.015	-0.014	0.241	0.212	0.211	0.115	-0.033	0.083	-0.359	0.083
281.4	-0.018	-0.022	0.238	0.208	0.207	0.116	-0.034	0.087	-0.362	0.083
282.8	-0.021	-0.026	0.230	0.205	0.201	0.118	-0.034	0.087	-0.361	0.083
284.2	-0.023	-0.026	0.221	0.200	0.195	0.117	-0.032	0.087	-0.366	0.083
285.6	-0.025	-0.026	0.220	0.195	0.192	0.119	-0.030	0.074	-0.371	0.082
287.0	-0.026	-0.025	0.219	0.191	0.189	0.117	-0.031	0.074	-0.367	0.082
288.4	-0.027	-0.027	0.216	0.187	0.186	0.115	-0.030	0.086	-0.364	0.082
289.8	-0.030	-0.030	0.214	0.182	0.182	0.114	-0.031	0.092	-0.365	0.082
291.2	-0.031	-0.034	0.210	0.176	0.176	0.111	-0.032	0.094	-0.367	0.082
292.6	-0.031	-0.039	0.205	0.171	0.172	0.110	-0.028	0.101	-0.364	0.082
294.0	-0.031	-0.045	0.197	0.167	0.168	0.111	-0.024	0.099	-0.363	0.083
295.4	-0.031	-0.048	0.196	0.164	0.165	0.108	-0.026	0.096	-0.362	0.084
296.8	-0.034	-0.047	0.201	0.161	0.163	0.104	-0.029	0.099	-0.358	0.084
298.3	-0.035	-0.048	0.196	0.158	0.160	0.101	-0.032	0.106	-0.355	0.084
299.7	-0.037	-0.055	0.188	0.156	0.157	0.096	-0.035	0.108	-0.353	0.084
301.1	-0.035	-0.057	0.182	0.153	0.150	0.093	-0.038	0.109	-0.347	0.083
302.5	-0.035	-0.058	0.179	0.151	0.144	0.090	-0.042	0.107	-0.344	0.083
303.9	-0.034	-0.059	0.177	0.148	0.141	0.088	-0.045	0.108	-0.345	0.084
305.3	-0.034	-0.055	0.169	0.143	0.136	0.087	-0.045	0.108	-0.341	0.084
306.7	-0.033	-0.052	0.170	0.142	0.131	0.082	-0.048	0.107	-0.338	0.084
308.1	-0.033	-0.048	0.173	0.141	0.126	0.077	-0.055	0.113	-0.337	0.083

Table 8. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	-0.034	-0.048	0.171	0.140	0.124	0.073	-0.057	0.116	-0.333	0.083
310.9	-0.034	-0.046	0.170	0.137	0.124	0.071	-0.054	0.117	-0.335	0.083
312.3	-0.035	-0.044	0.168	0.134	0.124	0.070	-0.057	0.116	-0.331	0.082
313.7	-0.036	-0.045	0.172	0.136	0.126	0.065	-0.062	0.114	-0.330	0.081
315.1	-0.036	-0.043	0.176	0.135	0.126	0.061	-0.063	0.123	-0.329	0.081
316.5	-0.035	-0.047	0.174	0.134	0.125	0.058	-0.064	0.123	-0.324	0.081
317.9	-0.035	-0.050	0.175	0.134	0.125	0.053	-0.068	0.113	-0.322	0.080
319.3	-0.032	-0.048	0.176	0.135	0.125	0.051	-0.070	0.110	-0.323	0.079
320.8	-0.031	-0.051	0.176	0.135	0.126	0.051	-0.069	0.113	-0.327	0.079
322.2	-0.027	-0.057	0.178	0.136	0.129	0.052	-0.067	0.111	-0.322	0.078
323.6	-0.025	-0.058	0.183	0.140	0.130	0.052	-0.067	0.104	-0.317	0.078
325.0	-0.026	-0.060	0.187	0.143	0.129	0.048	-0.068	0.106	-0.315	0.077
326.4	-0.026	-0.059	0.189	0.143	0.127	0.045	-0.070	0.102	-0.313	0.077
327.8	-0.019	-0.061	0.188	0.144	0.127	0.046	-0.070	0.097	-0.315	0.077
329.2	-0.016	-0.063	0.188	0.148	0.125	0.046	-0.072	0.097	-0.314	0.077
330.6	-0.013	-0.062	0.192	0.150	0.126	0.047	-0.074	0.088	-0.312	0.077
332.0	-0.008	-0.064	0.192	0.150	0.131	0.047	-0.073	0.084	-0.308	0.077
333.4	-0.004	-0.056	0.197	0.154	0.137	0.047	-0.073	0.086	-0.303	0.077
334.8	-0.003	-0.054	0.205	0.162	0.145	0.049	-0.072	0.083	-0.306	0.078
336.2	0.000	-0.055	0.207	0.166	0.148	0.051	-0.071	0.078	-0.305	0.079
337.6	0.004	-0.053	0.211	0.165	0.147	0.049	-0.072	0.077	-0.300	0.079
339.0	0.007	-0.054	0.213	0.166	0.148	0.048	-0.071	0.077	-0.299	0.079
340.4	0.009	-0.044	0.214	0.169	0.151	0.050	-0.072	0.077	-0.299	0.079
341.8	0.011	-0.043	0.219	0.173	0.157	0.052	-0.073	0.070	-0.296	0.079
343.3	0.014	-0.042	0.224	0.179	0.161	0.052	-0.072	0.067	-0.298	0.080
344.7	0.012	-0.037	0.221	0.184	0.162	0.052	-0.075	0.064	-0.299	0.080
346.1	0.010	-0.035	0.222	0.188	0.163	0.052	-0.078	0.065	-0.301	0.080
347.5	0.011	-0.036	0.224	0.189	0.164	0.054	-0.078	0.066	-0.305	0.081
348.9	0.011	-0.036	0.221	0.187	0.162	0.056	-0.078	0.060	-0.305	0.081
350.3	0.010	-0.034	0.226	0.187	0.168	0.058	-0.078	0.058	-0.304	0.081
351.7	0.007	-0.035	0.232	0.191	0.172	0.061	-0.080	0.057	-0.304	0.081
353.1	0.006	-0.033	0.232	0.195	0.173	0.062	-0.081	0.061	-0.306	0.081
354.5	0.005	-0.033	0.233	0.197	0.174	0.062	-0.081	0.061	-0.310	0.082
355.9	0.004	-0.035	0.236	0.199	0.176	0.065	-0.078	0.057	-0.314	0.081
357.3	-0.001	-0.040	0.235	0.200	0.179	0.068	-0.074	0.062	-0.314	0.081
358.7	-0.007	-0.039	0.234	0.202	0.181	0.071	-0.074	0.070	-0.317	0.080

Table 9. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0795$, $\mu = 0.013$, $\alpha_s = 0.0°$, $\theta = 13.4°$, $A_1 = 0.0°$, $B_1 = 0.1°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.393	0.607	0.637	0.575	0.209	-0.115	0.060	0.067	0.709	0.624	-0.045
1.5	0.392	0.607	0.642	0.579	0.210	-0.112	0.065	0.070	0.716	0.630	-0.055
2.9	0.395	0.613	0.648	0.585	0.215	-0.112	0.067	0.067	0.724	0.639	-0.041
4.3	0.404	0.623	0.655	0.591	0.217	-0.114	0.064	0.065	0.735	0.647	-0.036
5.8	0.412	0.629	0.659	0.596	0.218	-0.111	0.067	0.067	0.747	0.657	-0.039
7.2	0.414	0.634	0.667	0.601	0.220	-0.109	0.070	0.066	0.758	0.668	-0.055
8.6	0.420	0.646	0.676	0.610	0.223	-0.109	0.073	0.067	0.774	0.681	-0.083
10.0	0.433	0.659	0.687	0.619	0.228	-0.110	0.075	0.074	0.788	0.697	-0.075
11.4	0.445	0.673	0.699	0.629	0.232	-0.107	0.076	0.073	0.798	0.708	-0.050
12.8	0.456	0.685	0.710	0.638	0.238	-0.106	0.079	0.070	0.815	0.721	-0.047
14.2	0.471	0.702	0.724	0.651	0.240	-0.111	0.081	0.067	0.834	0.739	-0.036
15.6	0.484	0.715	0.735	0.662	0.242	-0.110	0.078	0.068	0.851	0.763	-0.021
17.0	0.497	0.731	0.750	0.670	0.247	-0.108	0.078	0.072	0.869	0.782	-0.007
18.4	0.517	0.753	0.766	0.682	0.250	-0.108	0.080	0.074	0.885	0.801	0.003
19.8	0.533	0.770	0.779	0.692	0.254	-0.106	0.083	0.073	0.903	0.832	-0.014
21.2	0.555	0.795	0.800	0.707	0.256	-0.103	0.078	0.075	0.921	0.854	0.013
22.6	0.573	0.815	0.817	0.721	0.261	-0.101	0.076	0.080	0.933	0.874	0.036
24.0	0.591	0.838	0.830	0.729	0.266	-0.101	0.077	0.081	0.945	0.900	0.054
25.4	0.612	0.857	0.846	0.743	0.271	-0.097	0.074	0.086	0.960	0.924	0.075
26.8	0.627	0.874	0.860	0.754	0.274	-0.095	0.072	0.091	0.971	0.943	0.080
28.3	0.631	0.885	0.873	0.761	0.280	-0.093	0.070	0.092	0.985	0.959	0.095
29.7	0.630	0.888	0.877	0.768	0.283	-0.091	0.068	0.096	0.990	0.971	0.119
31.1	0.634	0.898	0.883	0.772	0.281	-0.091	0.064	0.101	0.992	0.968	0.133
32.5	0.636	0.904	0.890	0.776	0.282	-0.089	0.059	0.105	0.997	0.948	0.102
33.9	0.646	0.919	0.897	0.781	0.282	-0.087	0.054	0.108	0.990	0.964	0.110
35.3	0.663	0.937	0.907	0.787	0.281	-0.087	0.052	0.114	0.975	0.983	0.127
36.7	0.667	0.946	0.917	0.794	0.281	-0.086	0.054	0.111	0.975	0.963	0.113
38.1	0.661	0.940	0.927	0.805	0.282	-0.085	0.052	0.111	0.979	0.933	0.095
39.5	0.653	0.935	0.922	0.807	0.282	-0.086	0.047	0.116	0.967	0.909	0.084
40.9	0.652	0.932	0.915	0.802	0.281	-0.087	0.042	0.121	0.945	0.891	0.100
42.3	0.653	0.932	0.908	0.796	0.281	-0.086	0.037	0.122	0.929	0.876	0.076
43.7	0.641	0.923	0.902	0.786	0.280	-0.084	0.040	0.118	0.914	0.858	0.060
45.1	0.630	0.909	0.898	0.783	0.275	-0.081	0.041	0.123	0.899	0.834	0.051
46.5	0.616	0.896	0.890	0.779	0.270	-0.079	0.043	0.127	0.887	0.806	0.032
47.9	0.602	0.884	0.879	0.772	0.266	-0.081	0.039	0.128	0.872	0.776	0.019
49.3	0.593	0.870	0.867	0.763	0.263	-0.081	0.033	0.127	0.854	0.755	0.005
50.8	0.581	0.854	0.856	0.753	0.263	-0.078	0.030	0.124	0.838	0.740	-0.001
52.2	0.565	0.837	0.842	0.740	0.260	-0.077	0.030	0.123	0.822	0.723	-0.011
53.6	0.546	0.815	0.828	0.729	0.252	-0.078	0.032	0.122	0.809	0.707	-0.017
55.0	0.530	0.795	0.812	0.718	0.247	-0.079	0.034	0.119	0.795	0.691	-0.019
56.4	0.516	0.778	0.795	0.705	0.244	-0.079	0.033	0.118	0.781	0.679	-0.032
57.8	0.503	0.760	0.780	0.691	0.239	-0.079	0.031	0.116	0.772	0.666	-0.036
59.2	0.489	0.747	0.764	0.678	0.234	-0.078	0.033	0.115	0.762	0.657	-0.041
60.6	0.472	0.732	0.751	0.664	0.229	-0.076	0.035	0.113	0.751	0.652	-0.048

Table 9. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.465	0.718	0.737	0.653	0.222	-0.078	0.035	0.109	0.743	0.644	-0.048
63.4	0.453	0.703	0.722	0.639	0.217	-0.080	0.035	0.106	0.736	0.637	-0.049
64.8	0.442	0.688	0.709	0.628	0.212	-0.080	0.037	0.103	0.728	0.631	-0.055
66.2	0.433	0.677	0.697	0.620	0.208	-0.079	0.040	0.103	0.722	0.630	-0.063
67.6	0.423	0.666	0.687	0.610	0.205	-0.080	0.042	0.100	0.716	0.628	-0.065
69.0	0.417	0.658	0.677	0.602	0.203	-0.082	0.045	0.100	0.712	0.627	-0.066
70.4	0.409	0.648	0.667	0.593	0.201	-0.079	0.047	0.103	0.709	0.626	-0.074
71.8	0.404	0.640	0.659	0.589	0.198	-0.079	0.049	0.098	0.706	0.626	-0.075
73.3	0.400	0.633	0.654	0.583	0.197	-0.079	0.050	0.095	0.704	0.629	-0.071
74.7	0.397	0.631	0.649	0.579	0.196	-0.078	0.054	0.096	0.704	0.631	-0.069
76.1	0.397	0.628	0.646	0.578	0.195	-0.079	0.057	0.094	0.703	0.635	-0.071
77.5	0.398	0.626	0.642	0.575	0.195	-0.076	0.057	0.092	0.701	0.640	-0.073
78.9	0.399	0.626	0.641	0.572	0.194	-0.075	0.059	0.091	0.702	0.643	-0.069
80.3	0.400	0.623	0.640	0.572	0.192	-0.077	0.065	0.087	0.704	0.644	-0.072
81.7	0.401	0.623	0.637	0.569	0.191	-0.080	0.068	0.087	0.705	0.651	-0.074
83.1	0.404	0.625	0.635	0.566	0.192	-0.080	0.069	0.087	0.709	0.659	-0.072
84.5	0.409	0.623	0.634	0.567	0.193	-0.078	0.074	0.083	0.713	0.664	-0.073
85.9	0.410	0.624	0.635	0.564	0.191	-0.080	0.074	0.078	0.717	0.667	-0.073
87.3	0.414	0.626	0.633	0.562	0.190	-0.082	0.078	0.077	0.722	0.675	-0.072
88.7	0.417	0.625	0.632	0.561	0.189	-0.082	0.084	0.077	0.730	0.680	-0.077
90.1	0.416	0.625	0.631	0.561	0.189	-0.082	0.086	0.076	0.738	0.690	-0.087
91.5	0.420	0.627	0.633	0.562	0.190	-0.082	0.089	0.074	0.746	0.704	-0.094
92.9	0.425	0.632	0.637	0.566	0.191	-0.080	0.095	0.076	0.758	0.715	-0.105
94.3	0.433	0.638	0.643	0.571	0.191	-0.080	0.104	0.074	0.774	0.731	-0.112
95.8	0.439	0.643	0.647	0.574	0.192	-0.082	0.107	0.074	0.787	0.746	-0.114
97.2	0.445	0.652	0.653	0.578	0.194	-0.084	0.107	0.076	0.799	0.761	-0.114
98.6	0.455	0.660	0.662	0.584	0.197	-0.084	0.109	0.078	0.817	0.779	-0.108
100.0	0.465	0.669	0.671	0.592	0.201	-0.085	0.114	0.079	0.833	0.802	-0.106
101.4	0.476	0.683	0.681	0.600	0.205	-0.084	0.115	0.076	0.847	0.819	-0.096
102.8	0.488	0.693	0.691	0.611	0.210	-0.086	0.116	0.075	0.866	0.835	-0.081
104.2	0.500	0.706	0.703	0.620	0.209	-0.091	0.118	0.074	0.884	0.859	-0.076
105.6	0.511	0.716	0.712	0.627	0.212	-0.091	0.120	0.076	0.903	0.888	-0.060
107.0	0.522	0.730	0.724	0.635	0.214	-0.086	0.125	0.078	0.926	0.914	-0.042
108.4	0.537	0.749	0.739	0.646	0.215	-0.083	0.127	0.078	0.944	0.941	-0.038
109.8	0.554	0.767	0.751	0.656	0.222	-0.081	0.125	0.082	0.966	0.975	-0.014
111.2	0.573	0.787	0.766	0.669	0.225	-0.076	0.125	0.083	0.987	1.003	0.015
112.6	0.591	0.805	0.784	0.682	0.226	-0.075	0.124	0.087	1.003	1.027	0.014
114.0	0.605	0.821	0.795	0.692	0.230	-0.071	0.125	0.094	1.022	1.063	0.015
115.4	0.625	0.841	0.808	0.701	0.234	-0.068	0.124	0.097	1.039	1.091	0.026
116.8	0.639	0.857	0.825	0.713	0.239	-0.064	0.121	0.101	1.054	1.110	0.036
118.3	0.643	0.860	0.829	0.719	0.242	-0.058	0.118	0.106	1.067	1.137	0.046
119.7	0.641	0.859	0.829	0.719	0.244	-0.056	0.118	0.113	1.075	1.146	0.053
121.1	0.636	0.862	0.838	0.724	0.244	-0.055	0.120	0.116	1.081	1.153	0.059
122.5	0.639	0.870	0.843	0.731	0.245	-0.056	0.115	0.119	1.078	1.141	0.037

Table 9. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.654	0.882	0.851	0.735	0.244	-0.054	0.111	0.122	1.076	1.150	0.038
125.3	0.665	0.894	0.860	0.743	0.244	-0.053	0.106	0.122	1.065	1.158	0.049
126.7	0.666	0.898	0.867	0.748	0.246	-0.051	0.101	0.128	1.055	1.133	0.050
128.1	0.662	0.894	0.873	0.754	0.245	-0.052	0.099	0.134	1.057	1.119	0.049
129.5	0.655	0.886	0.868	0.754	0.244	-0.051	0.095	0.139	1.034	1.087	0.008
130.9	0.657	0.885	0.861	0.748	0.242	-0.048	0.090	0.144	1.019	1.060	-0.005
132.3	0.651	0.881	0.857	0.742	0.241	-0.048	0.086	0.145	1.002	1.022	-0.024
133.7	0.638	0.869	0.854	0.738	0.239	-0.046	0.085	0.144	0.985	0.998	-0.042
135.1	0.632	0.865	0.850	0.736	0.234	-0.045	0.087	0.146	0.957	0.968	-0.044
136.5	0.621	0.857	0.841	0.729	0.231	-0.044	0.086	0.151	0.932	0.931	-0.054
137.9	0.613	0.844	0.833	0.724	0.227	-0.046	0.085	0.153	0.919	0.903	-0.065
139.3	0.600	0.830	0.823	0.717	0.225	-0.048	0.082	0.156	0.898	0.872	-0.080
140.8	0.587	0.818	0.810	0.707	0.224	-0.047	0.080	0.154	0.877	0.841	-0.080
142.2	0.571	0.803	0.801	0.696	0.220	-0.047	0.076	0.151	0.858	0.821	-0.090
143.6	0.555	0.783	0.788	0.689	0.214	-0.047	0.076	0.147	0.838	0.807	-0.091
145.0	0.541	0.768	0.770	0.679	0.210	-0.048	0.072	0.144	0.818	0.783	-0.092
146.4	0.525	0.751	0.756	0.663	0.208	-0.050	0.070	0.144	0.808	0.759	-0.092
147.8	0.510	0.732	0.742	0.652	0.203	-0.049	0.071	0.141	0.797	0.739	-0.090
149.2	0.496	0.721	0.729	0.639	0.199	-0.047	0.071	0.140	0.780	0.726	-0.096
150.6	0.485	0.709	0.715	0.627	0.193	-0.048	0.076	0.141	0.766	0.715	-0.090
152.0	0.475	0.696	0.704	0.620	0.188	-0.052	0.075	0.137	0.754	0.703	-0.084
153.4	0.465	0.685	0.692	0.609	0.185	-0.053	0.078	0.135	0.747	0.689	-0.091
154.8	0.453	0.669	0.683	0.601	0.183	-0.052	0.081	0.134	0.740	0.678	-0.092
156.2	0.445	0.659	0.673	0.594	0.183	-0.050	0.084	0.131	0.732	0.671	-0.088
157.6	0.439	0.651	0.663	0.584	0.180	-0.053	0.089	0.127	0.725	0.664	-0.087
159.0	0.431	0.641	0.655	0.578	0.178	-0.052	0.092	0.123	0.718	0.657	-0.086
160.4	0.424	0.632	0.646	0.570	0.177	-0.049	0.099	0.120	0.713	0.649	-0.078
161.8	0.415	0.624	0.641	0.566	0.176	-0.049	0.098	0.116	0.709	0.645	-0.073
163.3	0.412	0.618	0.638	0.562	0.176	-0.053	0.097	0.109	0.707	0.641	-0.073
164.7	0.408	0.614	0.633	0.559	0.175	-0.051	0.098	0.106	0.704	0.640	-0.077
166.1	0.404	0.610	0.630	0.559	0.174	-0.050	0.100	0.106	0.701	0.641	-0.075
167.5	0.403	0.608	0.628	0.555	0.176	-0.051	0.102	0.105	0.699	0.641	-0.079
168.9	0.401	0.606	0.627	0.554	0.175	-0.049	0.100	0.105	0.697	0.643	-0.090
170.3	0.403	0.604	0.622	0.550	0.174	-0.053	0.107	0.102	0.699	0.642	-0.093
171.7	0.402	0.603	0.621	0.549	0.174	-0.055	0.110	0.098	0.700	0.643	-0.103
173.1	0.400	0.603	0.620	0.548	0.175	-0.055	0.112	0.097	0.704	0.646	-0.112
174.5	0.402	0.604	0.619	0.548	0.177	-0.054	0.117	0.091	0.706	0.649	-0.119
175.9	0.403	0.604	0.619	0.547	0.176	-0.056	0.118	0.090	0.710	0.654	-0.125
177.3	0.403	0.603	0.617	0.546	0.174	-0.060	0.118	0.094	0.715	0.657	-0.115
178.7	0.403	0.601	0.615	0.545	0.176	-0.061	0.125	0.091	0.719	0.660	-0.105
180.1	0.402	0.601	0.615	0.546	0.178	-0.062	0.129	0.088	0.730	0.668	-0.091
181.5	0.402	0.601	0.619	0.550	0.178	-0.063	0.133	0.086	0.737	0.676	-0.084
182.9	0.405	0.607	0.623	0.553	0.179	-0.063	0.135	0.083	0.747	0.689	-0.071
184.3	0.412	0.614	0.628	0.556	0.180	-0.066	0.138	0.080	0.761	0.701	-0.042

Table 9. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.416	0.616	0.631	0.557	0.179	-0.069	0.141	0.080	0.773	0.714	-0.017
187.2	0.421	0.624	0.639	0.564	0.181	-0.072	0.145	0.081	0.785	0.729	-0.004
188.6	0.428	0.632	0.646	0.568	0.183	-0.073	0.149	0.082	0.804	0.747	0.002
190.0	0.434	0.641	0.654	0.574	0.187	-0.073	0.149	0.078	0.823	0.772	0.008
191.4	0.443	0.651	0.663	0.582	0.191	-0.076	0.150	0.076	0.837	0.788	0.014
192.8	0.453	0.663	0.676	0.593	0.192	-0.079	0.157	0.078	0.858	0.806	0.017
194.2	0.463	0.674	0.686	0.601	0.195	-0.081	0.163	0.079	0.878	0.832	0.015
195.6	0.471	0.684	0.696	0.608	0.199	-0.075	0.169	0.080	0.900	0.860	0.014
197.0	0.483	0.700	0.709	0.617	0.202	-0.074	0.175	0.083	0.921	0.888	0.025
198.4	0.498	0.713	0.721	0.627	0.202	-0.078	0.176	0.088	0.943	0.916	0.045
199.8	0.510	0.727	0.733	0.636	0.206	-0.077	0.176	0.093	0.967	0.951	0.072
201.2	0.528	0.747	0.747	0.647	0.210	-0.077	0.174	0.093	0.989	0.981	0.090
202.6	0.542	0.759	0.761	0.660	0.212	-0.078	0.171	0.094	1.008	1.009	0.101
204.0	0.553	0.774	0.773	0.667	0.218	-0.076	0.170	0.100	1.026	1.045	0.130
205.4	0.573	0.791	0.782	0.677	0.221	-0.076	0.169	0.104	1.043	1.078	0.161
206.8	0.581	0.797	0.788	0.682	0.221	-0.076	0.166	0.107	1.059	1.108	0.193
208.3	0.579	0.797	0.794	0.685	0.224	-0.077	0.162	0.110	1.072	1.135	0.208
209.7	0.580	0.800	0.799	0.692	0.226	-0.078	0.151	0.112	1.085	1.145	0.202
211.1	0.578	0.802	0.802	0.695	0.225	-0.075	0.147	0.115	1.088	1.159	0.209
212.5	0.575	0.803	0.800	0.695	0.224	-0.075	0.145	0.117	1.087	1.160	0.213
213.9	0.581	0.811	0.810	0.700	0.225	-0.075	0.142	0.122	1.088	1.163	0.211
215.3	0.591	0.826	0.820	0.708	0.223	-0.078	0.137	0.128	1.077	1.151	0.203
216.7	0.591	0.830	0.826	0.713	0.223	-0.080	0.127	0.129	1.065	1.149	0.188
218.1	0.582	0.822	0.824	0.715	0.223	-0.080	0.120	0.132	1.054	1.167	0.207
219.5	0.578	0.816	0.817	0.709	0.221	-0.083	0.114	0.136	1.037	1.123	0.166
220.9	0.576	0.812	0.813	0.708	0.218	-0.084	0.106	0.138	1.032	1.063	0.122
222.3	0.565	0.803	0.809	0.703	0.215	-0.085	0.100	0.137	1.016	1.046	0.128
223.7	0.555	0.796	0.805	0.698	0.213	-0.086	0.094	0.134	0.980	1.031	0.103
225.1	0.544	0.787	0.801	0.696	0.209	-0.085	0.092	0.133	0.951	0.988	0.075
226.5	0.539	0.784	0.795	0.690	0.207	-0.083	0.088	0.133	0.937	0.962	0.067
227.9	0.529	0.773	0.787	0.685	0.206	-0.081	0.085	0.132	0.921	0.940	0.056
229.3	0.516	0.758	0.779	0.680	0.205	-0.081	0.082	0.135	0.894	0.900	0.030
230.8	0.502	0.747	0.771	0.675	0.203	-0.079	0.079	0.136	0.878	0.870	0.011
232.2	0.490	0.732	0.760	0.665	0.202	-0.077	0.074	0.129	0.856	0.851	0.008
233.6	0.478	0.721	0.747	0.658	0.201	-0.078	0.074	0.128	0.830	0.830	-0.003
235.0	0.459	0.703	0.739	0.649	0.199	-0.078	0.075	0.130	0.816	0.805	-0.019
236.4	0.447	0.687	0.727	0.640	0.198	-0.078	0.075	0.127	0.804	0.788	-0.025
237.8	0.436	0.675	0.715	0.632	0.195	-0.078	0.073	0.124	0.790	0.769	-0.028
239.2	0.425	0.665	0.705	0.621	0.190	-0.075	0.074	0.123	0.773	0.752	-0.035
240.6	0.417	0.657	0.695	0.613	0.188	-0.076	0.073	0.119	0.760	0.739	-0.039
242.0	0.406	0.645	0.688	0.606	0.185	-0.078	0.077	0.113	0.749	0.725	-0.039
243.4	0.394	0.635	0.678	0.598	0.185	-0.077	0.078	0.114	0.738	0.711	-0.043
244.8	0.385	0.627	0.669	0.591	0.184	-0.077	0.077	0.113	0.729	0.701	-0.044
246.2	0.377	0.619	0.661	0.585	0.183	-0.077	0.077	0.109	0.721	0.694	-0.046

Table 9. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.369	0.611	0.656	0.580	0.184	-0.078	0.078	0.103	0.714	0.688	-0.050
249.0	0.363	0.605	0.649	0.575	0.184	-0.079	0.082	0.103	0.705	0.679	-0.051
250.4	0.356	0.598	0.644	0.571	0.186	-0.080	0.082	0.104	0.701	0.673	-0.053
251.8	0.352	0.594	0.639	0.568	0.188	-0.079	0.080	0.107	0.696	0.670	-0.057
253.3	0.349	0.589	0.638	0.566	0.190	-0.080	0.078	0.106	0.691	0.667	-0.056
254.7	0.343	0.587	0.636	0.564	0.191	-0.079	0.079	0.102	0.688	0.666	-0.054
256.1	0.343	0.589	0.633	0.564	0.189	-0.081	0.081	0.102	0.685	0.665	-0.056
257.5	0.343	0.587	0.633	0.563	0.191	-0.084	0.079	0.101	0.681	0.666	-0.056
258.9	0.343	0.587	0.631	0.561	0.195	-0.081	0.081	0.098	0.679	0.667	-0.050
260.3	0.345	0.588	0.631	0.562	0.196	-0.081	0.084	0.096	0.680	0.668	-0.042
261.7	0.346	0.588	0.633	0.563	0.196	-0.082	0.087	0.091	0.681	0.670	-0.037
263.1	0.347	0.591	0.633	0.563	0.196	-0.086	0.089	0.084	0.683	0.675	-0.030
264.5	0.352	0.595	0.632	0.564	0.197	-0.087	0.090	0.083	0.686	0.680	-0.027
265.9	0.356	0.596	0.633	0.565	0.198	-0.087	0.089	0.083	0.689	0.684	-0.028
267.3	0.357	0.598	0.635	0.565	0.199	-0.090	0.093	0.083	0.691	0.689	-0.028
268.7	0.361	0.602	0.634	0.564	0.200	-0.093	0.096	0.082	0.696	0.691	-0.029
270.1	0.364	0.604	0.634	0.564	0.202	-0.092	0.096	0.078	0.706	0.700	-0.027
271.5	0.365	0.606	0.639	0.569	0.203	-0.091	0.099	0.074	0.712	0.710	-0.028
272.9	0.371	0.614	0.645	0.575	0.206	-0.093	0.099	0.072	0.722	0.720	-0.030
274.3	0.385	0.625	0.650	0.580	0.211	-0.092	0.099	0.073	0.735	0.731	-0.027
275.8	0.391	0.629	0.657	0.587	0.214	-0.093	0.100	0.074	0.745	0.746	-0.027
277.2	0.398	0.641	0.666	0.597	0.216	-0.092	0.105	0.071	0.756	0.762	-0.030
278.6	0.410	0.652	0.674	0.603	0.220	-0.090	0.112	0.066	0.776	0.777	-0.024
280.0	0.424	0.668	0.686	0.613	0.222	-0.090	0.117	0.063	0.792	0.795	-0.021
281.4	0.439	0.683	0.694	0.622	0.227	-0.090	0.115	0.064	0.805	0.806	-0.011
282.8	0.451	0.695	0.708	0.634	0.232	-0.089	0.115	0.064	0.822	0.823	-0.001
284.2	0.466	0.713	0.723	0.648	0.236	-0.089	0.119	0.066	0.840	0.846	0.002
285.6	0.479	0.725	0.733	0.655	0.240	-0.089	0.117	0.066	0.862	0.869	0.018
287.0	0.495	0.744	0.747	0.664	0.243	-0.087	0.117	0.065	0.880	0.894	0.023
288.4	0.516	0.763	0.763	0.677	0.245	-0.086	0.120	0.069	0.897	0.915	0.044
289.8	0.530	0.780	0.774	0.686	0.250	-0.088	0.119	0.078	0.920	0.945	0.051
291.2	0.554	0.806	0.794	0.703	0.254	-0.086	0.118	0.085	0.940	0.971	0.054
292.6	0.574	0.826	0.811	0.720	0.259	-0.086	0.122	0.089	0.958	0.992	0.061
294.0	0.595	0.848	0.824	0.726	0.264	-0.088	0.122	0.093	0.972	1.025	0.059
295.4	0.617	0.865	0.839	0.739	0.264	-0.086	0.120	0.098	0.989	1.050	0.076
296.8	0.629	0.880	0.847	0.747	0.265	-0.084	0.118	0.103	1.004	1.073	0.089
298.3	0.634	0.886	0.861	0.753	0.270	-0.083	0.116	0.102	1.015	1.097	0.090
299.7	0.634	0.887	0.862	0.760	0.270	-0.084	0.115	0.103	1.028	1.104	0.091
301.1	0.640	0.897	0.865	0.762	0.270	-0.081	0.107	0.109	1.032	1.113	0.092
302.5	0.643	0.900	0.870	0.764	0.270	-0.081	0.101	0.115	1.028	1.107	0.105
303.9	0.653	0.908	0.875	0.769	0.268	-0.084	0.097	0.120	1.030	1.107	0.105
305.3	0.668	0.927	0.886	0.776	0.268	-0.084	0.096	0.124	1.022	1.117	0.103
306.7	0.671	0.932	0.895	0.781	0.269	-0.084	0.090	0.125	1.009	1.109	0.086
308.1	0.665	0.924	0.895	0.785	0.269	-0.088	0.081	0.125	1.008	1.101	0.093

Table 9. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.655	0.915	0.890	0.783	0.267	-0.090	0.080	0.128	0.997	1.060	0.048
310.9	0.653	0.909	0.886	0.779	0.265	-0.090	0.074	0.133	0.982	1.019	0.016
312.3	0.652	0.908	0.878	0.774	0.263	-0.090	0.068	0.137	0.963	1.009	0.030
313.7	0.644	0.903	0.875	0.766	0.259	-0.092	0.069	0.134	0.941	0.994	0.009
315.1	0.634	0.890	0.871	0.765	0.257	-0.092	0.068	0.130	0.919	0.978	-0.011
316.5	0.623	0.877	0.863	0.759	0.256	-0.090	0.065	0.131	0.905	0.951	-0.018
317.9	0.610	0.864	0.852	0.753	0.251	-0.092	0.061	0.133	0.893	0.908	-0.046
319.3	0.596	0.848	0.841	0.743	0.248	-0.095	0.058	0.133	0.881	0.881	-0.068
320.8	0.587	0.835	0.828	0.735	0.247	-0.094	0.054	0.134	0.854	0.857	-0.067
322.2	0.571	0.816	0.814	0.724	0.244	-0.094	0.049	0.132	0.831	0.834	-0.061
323.6	0.554	0.796	0.801	0.713	0.241	-0.097	0.049	0.129	0.816	0.812	-0.059
325.0	0.535	0.778	0.790	0.706	0.240	-0.096	0.049	0.128	0.801	0.790	-0.064
326.4	0.520	0.760	0.776	0.695	0.237	-0.095	0.049	0.131	0.788	0.771	-0.059
327.8	0.507	0.744	0.761	0.684	0.233	-0.096	0.045	0.130	0.774	0.753	-0.054
329.2	0.499	0.732	0.748	0.672	0.229	-0.096	0.043	0.123	0.764	0.733	-0.052
330.6	0.485	0.718	0.734	0.659	0.225	-0.101	0.045	0.118	0.751	0.719	-0.055
332.0	0.473	0.704	0.724	0.651	0.220	-0.104	0.045	0.123	0.740	0.707	-0.057
333.4	0.461	0.689	0.713	0.643	0.216	-0.105	0.043	0.122	0.733	0.691	-0.055
334.8	0.449	0.674	0.700	0.631	0.212	-0.105	0.047	0.116	0.726	0.679	-0.057
336.2	0.440	0.665	0.688	0.622	0.208	-0.104	0.047	0.115	0.715	0.669	-0.053
337.6	0.431	0.653	0.680	0.612	0.207	-0.111	0.046	0.111	0.708	0.659	-0.052
339.0	0.421	0.644	0.671	0.605	0.207	-0.112	0.048	0.108	0.702	0.653	-0.054
340.4	0.411	0.634	0.662	0.599	0.208	-0.112	0.045	0.106	0.698	0.645	-0.049
341.8	0.405	0.625	0.655	0.592	0.205	-0.114	0.044	0.100	0.694	0.636	-0.047
343.3	0.398	0.618	0.649	0.587	0.204	-0.116	0.043	0.094	0.690	0.631	-0.048
344.7	0.392	0.613	0.646	0.586	0.205	-0.117	0.044	0.089	0.687	0.627	-0.050
346.1	0.387	0.609	0.644	0.584	0.203	-0.119	0.048	0.088	0.684	0.625	-0.047
347.5	0.386	0.606	0.639	0.581	0.204	-0.121	0.050	0.086	0.681	0.622	-0.044
348.9	0.385	0.605	0.637	0.578	0.206	-0.120	0.048	0.082	0.680	0.619	-0.042
350.3	0.385	0.603	0.636	0.578	0.206	-0.117	0.044	0.079	0.683	0.618	-0.041
351.7	0.383	0.601	0.634	0.577	0.205	-0.118	0.049	0.075	0.683	0.616	-0.041
353.1	0.383	0.603	0.634	0.577	0.205	-0.117	0.053	0.069	0.685	0.618	-0.033
354.5	0.387	0.604	0.636	0.578	0.206	-0.113	0.055	0.068	0.689	0.620	-0.029
355.9	0.388	0.604	0.637	0.578	0.205	-0.115	0.058	0.067	0.692	0.620	-0.030
357.3	0.389	0.604	0.637	0.577	0.207	-0.114	0.059	0.067	0.696	0.622	-0.026
358.7	0.391	0.607	0.636	0.575	0.207	-0.114	0.061	0.069	0.702	0.621	-0.028

Table 10. Modified unsteady pressure coefficients around the body at x/l = 0.90. C_T/σ = 0.0795, μ = 0.013, α_s = 0.0°, θ = 13.4°, A_1 = 0.0°, B_1 = 0.1°.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.020	0.015	0.249	0.222	0.152	0.060	-0.038	0.098	-0.255	0.024
1.5	0.022	0.008	0.255	0.220	0.157	0.065	-0.039	0.094	-0.258	0.023
2.9	0.022	0.006	0.254	0.219	0.159	0.067	-0.038	0.091	-0.262	0.023
4.3	0.023	0.012	0.251	0.216	0.164	0.064	-0.037	0.090	-0.264	0.022
5.8	0.024	0.005	0.248	0.215	0.166	0.067	-0.040	0.094	-0.269	0.022
7.2	0.023	0.000	0.248	0.214	0.165	0.070	-0.037	0.096	-0.268	0.021
8.6	0.025	0.005	0.246	0.215	0.164	0.073	-0.030	0.094	-0.267	0.021
10.0	0.025	0.001	0.239	0.213	0.162	0.075	-0.027	0.093	-0.271	0.021
11.4	0.024	-0.006	0.236	0.209	0.159	0.076	-0.027	0.095	-0.272	0.021
12.8	0.025	-0.011	0.236	0.209	0.162	0.079	-0.026	0.094	-0.277	0.021
14.2	0.024	-0.007	0.231	0.207	0.160	0.081	-0.023	0.093	-0.281	0.021
15.6	0.022	-0.008	0.227	0.205	0.151	0.078	-0.022	0.096	-0.285	0.020
17.0	0.020	-0.016	0.220	0.201	0.147	0.078	-0.020	0.100	-0.284	0.020
18.4	0.019	-0.017	0.213	0.196	0.148	0.080	-0.016	0.098	-0.285	0.020
19.8	0.019	-0.021	0.211	0.192	0.148	0.083	-0.011	0.096	-0.288	0.020
21.2	0.018	-0.022	0.209	0.189	0.145	0.078	-0.008	0.100	-0.290	0.019
22.6	0.017	-0.027	0.203	0.186	0.139	0.076	-0.009	0.105	-0.290	0.019
24.0	0.017	-0.031	0.197	0.182	0.134	0.077	-0.005	0.107	-0.286	0.018
25.4	0.017	-0.038	0.190	0.179	0.134	0.074	-0.002	0.108	-0.284	0.018
26.8	0.015	-0.045	0.183	0.174	0.131	0.072	-0.006	0.112	-0.288	0.017
28.3	0.014	-0.052	0.185	0.171	0.125	0.070	-0.005	0.112	-0.285	0.017
29.7	0.013	-0.055	0.188	0.168	0.126	0.068	-0.005	0.113	-0.279	0.017
31.1	0.011	-0.055	0.189	0.163	0.124	0.064	-0.008	0.123	-0.280	0.017
32.5	0.010	-0.057	0.186	0.158	0.117	0.059	-0.012	0.130	-0.281	0.017
33.9	0.008	-0.059	0.187	0.156	0.115	0.054	-0.015	0.132	-0.276	0.017
35.3	0.009	-0.067	0.190	0.153	0.114	0.052	-0.018	0.129	-0.277	0.018
36.7	0.010	-0.065	0.191	0.152	0.113	0.054	-0.017	0.130	-0.275	0.018
38.1	0.010	-0.065	0.185	0.152	0.114	0.052	-0.016	0.132	-0.274	0.019
39.5	0.011	-0.063	0.184	0.150	0.113	0.047	-0.021	0.138	-0.271	0.019
40.9	0.013	-0.057	0.187	0.150	0.112	0.042	-0.026	0.147	-0.268	0.019
42.3	0.012	-0.059	0.182	0.146	0.110	0.037	-0.034	0.146	-0.269	0.019
43.7	0.014	-0.053	0.186	0.145	0.109	0.040	-0.032	0.139	-0.268	0.020
45.1	0.015	-0.045	0.185	0.147	0.115	0.041	-0.028	0.139	-0.270	0.020
46.5	0.016	-0.045	0.189	0.146	0.122	0.043	-0.031	0.140	-0.267	0.021
47.9	0.019	-0.042	0.189	0.146	0.120	0.039	-0.033	0.140	-0.262	0.021
49.3	0.020	-0.043	0.190	0.144	0.117	0.033	-0.037	0.140	-0.259	0.021
50.8	0.022	-0.040	0.194	0.145	0.115	0.030	-0.040	0.136	-0.260	0.022
52.2	0.021	-0.040	0.193	0.147	0.115	0.030	-0.042	0.131	-0.265	0.022
53.6	0.020	-0.038	0.199	0.150	0.117	0.032	-0.041	0.132	-0.264	0.023
55.0	0.021	-0.039	0.201	0.153	0.118	0.034	-0.038	0.134	-0.255	0.023
56.4	0.022	-0.040	0.205	0.156	0.122	0.033	-0.039	0.136	-0.253	0.023
57.8	0.024	-0.032	0.211	0.164	0.123	0.031	-0.040	0.128	-0.253	0.022
59.2	0.026	-0.032	0.209	0.169	0.125	0.033	-0.040	0.124	-0.249	0.022
60.6	0.028	-0.032	0.208	0.171	0.128	0.035	-0.040	0.131	-0.251	0.022

Table 10. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.027	-0.025	0.211	0.176	0.132	0.035	-0.043	0.131	-0.256	0.022
63.4	0.026	-0.017	0.219	0.182	0.134	0.035	-0.043	0.125	-0.251	0.022
64.8	0.029	-0.013	0.226	0.187	0.136	0.037	-0.041	0.124	-0.251	0.021
66.2	0.032	-0.008	0.227	0.194	0.138	0.040	-0.043	0.120	-0.254	0.022
67.6	0.034	-0.003	0.225	0.197	0.140	0.042	-0.043	0.117	-0.252	0.022
69.0	0.037	0.005	0.232	0.203	0.142	0.045	-0.043	0.119	-0.252	0.022
70.4	0.038	0.002	0.239	0.208	0.145	0.047	-0.043	0.121	-0.253	0.023
71.8	0.038	0.004	0.240	0.210	0.144	0.049	-0.046	0.117	-0.254	0.023
73.3	0.041	0.008	0.245	0.215	0.147	0.050	-0.045	0.113	-0.254	0.024
74.7	0.041	0.008	0.253	0.221	0.153	0.054	-0.046	0.112	-0.254	0.025
76.1	0.043	0.008	0.259	0.227	0.159	0.057	-0.044	0.106	-0.256	0.026
77.5	0.046	0.005	0.260	0.229	0.162	0.057	-0.041	0.104	-0.253	0.027
78.9	0.049	0.000	0.260	0.230	0.167	0.059	-0.045	0.104	-0.242	0.027
80.3	0.049	0.000	0.259	0.231	0.174	0.065	-0.043	0.097	-0.247	0.028
81.7	0.050	-0.003	0.264	0.233	0.177	0.068	-0.042	0.094	-0.251	0.028
83.1	0.050	-0.005	0.265	0.233	0.185	0.069	-0.041	0.092	-0.251	0.028
84.5	0.052	-0.002	0.267	0.236	0.194	0.074	-0.037	0.089	-0.255	0.029
85.9	0.054	0.008	0.272	0.244	0.198	0.074	-0.034	0.092	-0.256	0.029
87.3	0.055	0.011	0.274	0.246	0.204	0.078	-0.034	0.091	-0.257	0.030
88.7	0.057	0.007	0.278	0.247	0.210	0.084	-0.033	0.090	-0.257	0.030
90.1	0.057	0.005	0.278	0.251	0.214	0.086	-0.027	0.090	-0.259	0.030
91.5	0.059	0.006	0.283	0.254	0.217	0.089	-0.025	0.086	-0.263	0.030
92.9	0.059	0.007	0.284	0.254	0.222	0.095	-0.022	0.087	-0.266	0.030
94.3	0.058	0.005	0.282	0.253	0.226	0.104	-0.018	0.085	-0.266	0.030
95.8	0.059	0.002	0.280	0.253	0.227	0.107	-0.016	0.081	-0.271	0.029
97.2	0.059	0.001	0.278	0.252	0.226	0.107	-0.014	0.078	-0.271	0.029
98.6	0.058	-0.004	0.280	0.251	0.227	0.109	-0.011	0.079	-0.268	0.029
100.0	0.056	-0.013	0.275	0.250	0.227	0.114	-0.006	0.084	-0.269	0.029
101.4	0.055	-0.017	0.274	0.249	0.221	0.115	0.000	0.085	-0.271	0.028
102.8	0.052	-0.030	0.275	0.245	0.213	0.116	0.003	0.083	-0.272	0.027
104.2	0.049	-0.027	0.265	0.240	0.212	0.118	0.001	0.081	-0.274	0.027
105.6	0.046	-0.028	0.257	0.234	0.208	0.120	0.004	0.084	-0.276	0.026
107.0	0.044	-0.032	0.252	0.232	0.204	0.125	0.011	0.085	-0.278	0.025
108.4	0.041	-0.030	0.244	0.230	0.202	0.127	0.015	0.091	-0.281	0.025
109.8	0.038	-0.033	0.241	0.225	0.195	0.125	0.015	0.098	-0.278	0.025
111.2	0.036	-0.037	0.238	0.219	0.191	0.125	0.015	0.106	-0.278	0.024
112.6	0.034	-0.045	0.232	0.211	0.186	0.124	0.019	0.113	-0.278	0.024
114.0	0.032	-0.050	0.229	0.203	0.181	0.125	0.022	0.114	-0.275	0.024
115.4	0.030	-0.055	0.226	0.197	0.177	0.124	0.024	0.119	-0.271	0.024
116.8	0.029	-0.061	0.220	0.195	0.169	0.121	0.026	0.122	-0.266	0.024
118.3	0.028	-0.060	0.212	0.199	0.164	0.118	0.026	0.125	-0.268	0.025
119.7	0.025	-0.067	0.210	0.197	0.163	0.118	0.027	0.130	-0.263	0.024
121.1	0.022	-0.065	0.214	0.190	0.162	0.120	0.027	0.134	-0.258	0.024
122.5	0.021	-0.057	0.213	0.187	0.163	0.115	0.027	0.137	-0.256	0.024

Table 10. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.019	-0.065	0.209	0.184	0.157	0.111	0.026	0.141	-0.252	0.024
125.3	0.019	-0.065	0.206	0.181	0.152	0.106	0.022	0.148	-0.248	0.024
126.7	0.017	-0.067	0.205	0.178	0.151	0.101	0.019	0.150	-0.243	0.024
128.1	0.015	-0.066	0.203	0.174	0.149	0.099	0.016	0.152	-0.242	0.024
129.5	0.017	-0.063	0.197	0.170	0.145	0.095	0.010	0.161	-0.240	0.024
130.9	0.017	-0.063	0.195	0.166	0.145	0.090	0.006	0.163	-0.235	0.024
132.3	0.017	-0.064	0.195	0.164	0.146	0.086	0.002	0.167	-0.231	0.025
133.7	0.017	-0.069	0.193	0.160	0.143	0.085	0.000	0.166	-0.226	0.025
135.1	0.019	-0.068	0.197	0.165	0.141	0.087	0.003	0.165	-0.225	0.025
136.5	0.019	-0.066	0.189	0.163	0.145	0.086	0.007	0.172	-0.225	0.025
137.9	0.021	-0.069	0.188	0.163	0.148	0.085	0.011	0.171	-0.221	0.025
139.3	0.024	-0.071	0.191	0.166	0.144	0.082	0.004	0.170	-0.221	0.025
140.8	0.023	-0.073	0.192	0.167	0.140	0.080	-0.003	0.170	-0.222	0.026
142.2	0.022	-0.072	0.202	0.168	0.137	0.076	-0.005	0.167	-0.221	0.026
143.6	0.022	-0.068	0.202	0.165	0.134	0.076	-0.009	0.159	-0.227	0.026
145.0	0.024	-0.062	0.200	0.169	0.138	0.072	-0.014	0.165	-0.229	0.026
146.4	0.026	-0.064	0.204	0.177	0.145	0.070	-0.014	0.164	-0.221	0.027
147.8	0.029	-0.067	0.212	0.183	0.150	0.071	-0.016	0.155	-0.221	0.028
149.2	0.032	-0.064	0.219	0.190	0.158	0.071	-0.016	0.155	-0.217	0.028
150.6	0.035	-0.060	0.227	0.197	0.162	0.076	-0.012	0.153	-0.213	0.029
152.0	0.035	-0.058	0.240	0.202	0.166	0.075	-0.013	0.151	-0.215	0.029
153.4	0.037	-0.050	0.249	0.210	0.167	0.078	-0.014	0.150	-0.214	0.029
154.8	0.040	-0.036	0.262	0.216	0.169	0.081	-0.014	0.154	-0.207	0.030
156.2	0.043	-0.022	0.280	0.223	0.176	0.084	-0.018	0.151	-0.202	0.031
157.6	0.049	-0.018	0.288	0.229	0.181	0.089	-0.017	0.143	-0.203	0.032
159.0	0.054	-0.013	0.292	0.233	0.182	0.092	-0.012	0.145	-0.202	0.034
160.4	0.057	-0.009	0.295	0.239	0.187	0.099	-0.012	0.146	-0.198	0.034
161.8	0.059	-0.012	0.299	0.242	0.189	0.098	-0.016	0.145	-0.197	0.034
163.3	0.061	-0.010	0.306	0.245	0.188	0.097	-0.016	0.142	-0.198	0.035
164.7	0.063	-0.016	0.305	0.250	0.190	0.098	-0.014	0.138	-0.202	0.036
166.1	0.062	-0.002	0.308	0.257	0.193	0.100	-0.014	0.133	-0.201	0.037
167.5	0.062	0.010	0.319	0.265	0.197	0.102	-0.013	0.134	-0.198	0.038
168.9	0.062	0.014	0.317	0.269	0.199	0.100	-0.012	0.133	-0.198	0.039
170.3	0.061	0.018	0.314	0.271	0.205	0.107	-0.012	0.128	-0.199	0.039
171.7	0.060	0.016	0.318	0.273	0.212	0.110	-0.011	0.123	-0.199	0.040
173.1	0.057	0.023	0.319	0.275	0.214	0.112	-0.011	0.125	-0.199	0.040
174.5	0.053	0.021	0.327	0.276	0.219	0.117	-0.007	0.125	-0.203	0.040
175.9	0.051	0.025	0.336	0.279	0.223	0.118	0.000	0.119	-0.207	0.040
177.3	0.048	0.031	0.334	0.282	0.225	0.118	0.001	0.117	-0.206	0.040
178.7	0.044	0.029	0.330	0.284	0.228	0.125	0.002	0.117	-0.204	0.039
180.1	0.041	0.026	0.325	0.285	0.231	0.129	0.006	0.115	-0.206	0.039
181.5	0.039	0.027	0.320	0.287	0.237	0.133	0.009	0.110	-0.212	0.038
182.9	0.036	0.031	0.325	0.291	0.238	0.135	0.012	0.108	-0.215	0.038
184.3	0.035	0.037	0.325	0.290	0.239	0.138	0.017	0.112	-0.220	0.037

Table 10. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.033	0.040	0.326	0.289	0.243	0.141	0.020	0.115	-0.224	0.036
187.2	0.032	0.033	0.325	0.291	0.250	0.145	0.021	0.109	-0.225	0.036
188.6	0.029	0.034	0.326	0.292	0.252	0.149	0.024	0.107	-0.225	0.036
190.0	0.025	0.034	0.324	0.288	0.250	0.149	0.023	0.110	-0.221	0.036
191.4	0.024	0.035	0.315	0.283	0.250	0.150	0.022	0.111	-0.224	0.036
192.8	0.023	0.033	0.308	0.280	0.248	0.157	0.026	0.106	-0.230	0.036
194.2	0.022	0.022	0.300	0.276	0.251	0.163	0.031	0.107	-0.231	0.036
195.6	0.021	0.018	0.297	0.274	0.251	0.169	0.038	0.115	-0.232	0.037
197.0	0.021	0.016	0.292	0.269	0.246	0.175	0.047	0.113	-0.233	0.037
198.4	0.022	0.011	0.281	0.263	0.242	0.176	0.045	0.109	-0.232	0.037
199.8	0.020	0.001	0.276	0.256	0.237	0.176	0.045	0.117	-0.231	0.037
201.2	0.019	-0.012	0.272	0.248	0.234	0.174	0.048	0.120	-0.233	0.037
202.6	0.019	-0.008	0.264	0.242	0.229	0.171	0.047	0.117	-0.231	0.036
204.0	0.017	-0.012	0.264	0.240	0.225	0.170	0.049	0.122	-0.232	0.036
205.4	0.016	-0.015	0.260	0.238	0.221	0.169	0.049	0.130	-0.235	0.036
206.8	0.017	-0.009	0.258	0.234	0.213	0.166	0.052	0.136	-0.236	0.036
208.3	0.016	-0.014	0.255	0.229	0.206	0.162	0.050	0.142	-0.234	0.036
209.7	0.013	-0.023	0.245	0.224	0.199	0.151	0.048	0.149	-0.234	0.036
211.1	0.012	-0.031	0.240	0.219	0.195	0.147	0.049	0.157	-0.238	0.035
212.5	0.010	-0.034	0.239	0.211	0.189	0.145	0.046	0.159	-0.240	0.035
213.9	0.010	-0.038	0.236	0.205	0.181	0.142	0.044	0.161	-0.242	0.034
215.3	0.011	-0.040	0.227	0.199	0.172	0.137	0.041	0.164	-0.241	0.034
216.7	0.009	-0.040	0.222	0.198	0.166	0.127	0.036	0.164	-0.242	0.033
218.1	0.006	-0.042	0.218	0.196	0.159	0.120	0.029	0.166	-0.248	0.032
219.5	0.005	-0.042	0.211	0.187	0.153	0.114	0.026	0.173	-0.249	0.032
220.9	0.006	-0.046	0.208	0.186	0.148	0.106	0.022	0.171	-0.241	0.032
222.3	0.004	-0.046	0.205	0.185	0.143	0.100	0.020	0.169	-0.237	0.031
223.7	0.004	-0.049	0.201	0.180	0.138	0.094	0.018	0.172	-0.240	0.031
225.1	0.003	-0.051	0.198	0.179	0.137	0.092	0.018	0.169	-0.246	0.031
226.5	0.003	-0.050	0.197	0.177	0.136	0.088	0.014	0.166	-0.243	0.031
227.9	0.005	-0.048	0.204	0.178	0.136	0.085	0.009	0.168	-0.244	0.030
229.3	0.004	-0.040	0.212	0.179	0.134	0.082	0.007	0.170	-0.244	0.031
230.8	0.003	-0.040	0.211	0.179	0.137	0.079	0.002	0.169	-0.245	0.031
232.2	0.004	-0.046	0.204	0.180	0.137	0.074	-0.006	0.163	-0.250	0.031
233.6	0.005	-0.043	0.207	0.181	0.136	0.074	-0.009	0.161	-0.253	0.031
235.0	0.004	-0.038	0.213	0.183	0.139	0.075	-0.008	0.168	-0.252	0.032
236.4	0.005	-0.034	0.219	0.182	0.138	0.075	-0.008	0.167	-0.248	0.033
237.8	0.007	-0.036	0.231	0.185	0.138	0.073	-0.009	0.164	-0.250	0.033
239.2	0.008	-0.030	0.234	0.189	0.139	0.074	-0.014	0.161	-0.252	0.033
240.6	0.010	-0.022	0.231	0.194	0.141	0.073	-0.018	0.155	-0.262	0.033
242.0	0.011	-0.024	0.232	0.197	0.142	0.077	-0.020	0.152	-0.262	0.033
243.4	0.013	-0.028	0.234	0.197	0.137	0.078	-0.015	0.158	-0.257	0.035
244.8	0.012	-0.022	0.243	0.205	0.140	0.077	-0.018	0.158	-0.263	0.036
246.2	0.014	-0.013	0.251	0.212	0.143	0.077	-0.020	0.158	-0.258	0.036

Table 10. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.016	-0.006	0.251	0.215	0.147	0.078	-0.017	0.149	-0.250	0.037
249.0	0.016	-0.005	0.249	0.218	0.151	0.082	-0.019	0.146	-0.250	0.037
250.4	0.015	0.000	0.252	0.221	0.154	0.082	-0.017	0.143	-0.249	0.038
251.8	0.015	0.003	0.255	0.227	0.156	0.080	-0.011	0.138	-0.244	0.038
253.3	0.017	0.006	0.265	0.239	0.161	0.078	-0.013	0.140	-0.250	0.039
254.7	0.015	0.009	0.267	0.246	0.163	0.079	-0.015	0.140	-0.251	0.038
256.1	0.012	0.006	0.267	0.250	0.166	0.081	-0.011	0.135	-0.241	0.038
257.5	0.012	0.003	0.266	0.253	0.171	0.079	-0.008	0.123	-0.242	0.038
258.9	0.012	0.002	0.274	0.255	0.173	0.081	-0.007	0.121	-0.242	0.038
260.3	0.012	-0.001	0.283	0.257	0.177	0.084	-0.002	0.119	-0.246	0.038
261.7	0.013	0.003	0.288	0.261	0.177	0.087	-0.002	0.114	-0.245	0.038
263.1	0.013	0.002	0.290	0.263	0.180	0.089	-0.003	0.107	-0.251	0.038
264.5	0.012	-0.002	0.288	0.263	0.183	0.090	-0.004	0.100	-0.253	0.038
265.9	0.010	-0.001	0.292	0.266	0.187	0.089	-0.006	0.099	-0.252	0.038
267.3	0.011	0.002	0.293	0.266	0.188	0.093	-0.008	0.100	-0.259	0.039
268.7	0.013	0.004	0.293	0.266	0.191	0.096	-0.008	0.102	-0.256	0.039
270.1	0.016	0.003	0.291	0.268	0.196	0.096	-0.011	0.101	-0.260	0.039
271.5	0.017	0.001	0.290	0.268	0.200	0.099	-0.010	0.103	-0.264	0.038
272.9	0.017	-0.008	0.289	0.267	0.200	0.099	-0.007	0.097	-0.267	0.038
274.3	0.020	-0.001	0.289	0.267	0.199	0.099	-0.003	0.093	-0.271	0.039
275.8	0.022	-0.003	0.286	0.267	0.204	0.100	0.002	0.101	-0.275	0.039
277.2	0.026	-0.003	0.286	0.266	0.207	0.105	0.004	0.104	-0.279	0.039
278.6	0.027	0.002	0.292	0.269	0.208	0.112	0.003	0.107	-0.285	0.040
280.0	0.025	-0.002	0.288	0.266	0.203	0.117	0.002	0.104	-0.284	0.039
281.4	0.027	0.006	0.284	0.259	0.202	0.115	0.003	0.105	-0.285	0.039
282.8	0.029	0.006	0.282	0.255	0.205	0.115	0.001	0.103	-0.297	0.039
284.2	0.031	0.002	0.275	0.249	0.204	0.119	0.004	0.105	-0.294	0.039
285.6	0.030	-0.003	0.275	0.244	0.201	0.117	0.010	0.108	-0.294	0.039
287.0	0.029	-0.014	0.270	0.239	0.198	0.117	0.016	0.103	-0.300	0.038
288.4	0.030	-0.015	0.261	0.235	0.196	0.120	0.015	0.110	-0.300	0.038
289.8	0.031	-0.016	0.251	0.230	0.191	0.119	0.017	0.115	-0.293	0.037
291.2	0.031	-0.018	0.243	0.225	0.186	0.118	0.016	0.114	-0.290	0.037
292.6	0.031	-0.016	0.241	0.219	0.182	0.122	0.018	0.118	-0.293	0.037
294.0	0.031	-0.017	0.240	0.212	0.179	0.122	0.022	0.125	-0.290	0.036
295.4	0.031	-0.020	0.236	0.207	0.176	0.120	0.019	0.126	-0.289	0.035
296.8	0.031	-0.036	0.226	0.202	0.169	0.118	0.013	0.136	-0.292	0.034
298.3	0.029	-0.038	0.216	0.197	0.163	0.116	0.015	0.143	-0.286	0.033
299.7	0.028	-0.040	0.212	0.193	0.158	0.115	0.016	0.136	-0.280	0.033
301.1	0.026	-0.046	0.209	0.188	0.153	0.107	0.018	0.146	-0.281	0.031
302.5	0.024	-0.040	0.200	0.186	0.144	0.101	0.021	0.150	-0.276	0.030
303.9	0.022	-0.044	0.198	0.182	0.134	0.097	0.020	0.146	-0.272	0.030
305.3	0.021	-0.036	0.202	0.176	0.126	0.096	0.023	0.151	-0.274	0.029
306.7	0.018	-0.032	0.197	0.171	0.120	0.090	0.018	0.157	-0.278	0.029
308.1	0.017	-0.037	0.193	0.168	0.117	0.081	0.011	0.162	-0.276	0.028

Table 10. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.019	-0.039	0.193	0.164	0.110	0.080	0.005	0.161	-0.271	0.027
310.9	0.018	-0.039	0.195	0.162	0.114	0.074	-0.003	0.166	-0.267	0.027
312.3	0.016	-0.046	0.193	0.155	0.116	0.068	-0.007	0.172	-0.268	0.026
313.7	0.017	-0.049	0.191	0.152	0.111	0.069	-0.012	0.164	-0.270	0.026
315.1	0.017	-0.047	0.191	0.153	0.114	0.068	-0.013	0.167	-0.268	0.027
316.5	0.016	-0.048	0.186	0.152	0.114	0.065	-0.014	0.174	-0.264	0.027
317.9	0.015	-0.045	0.188	0.154	0.114	0.061	-0.020	0.177	-0.263	0.028
319.3	0.013	-0.045	0.189	0.153	0.111	0.058	-0.022	0.174	-0.266	0.027
320.8	0.013	-0.047	0.190	0.153	0.106	0.054	-0.027	0.170	-0.268	0.027
322.2	0.014	-0.040	0.194	0.156	0.107	0.049	-0.035	0.172	-0.271	0.027
323.6	0.014	-0.037	0.198	0.158	0.106	0.049	-0.034	0.171	-0.274	0.027
325.0	0.015	-0.038	0.204	0.161	0.106	0.049	-0.033	0.177	-0.272	0.028
326.4	0.017	-0.032	0.205	0.165	0.110	0.049	-0.032	0.178	-0.269	0.028
327.8	0.017	-0.028	0.208	0.170	0.113	0.045	-0.034	0.175	-0.269	0.028
329.2	0.020	-0.019	0.211	0.169	0.113	0.043	-0.039	0.167	-0.269	0.027
330.6	0.022	-0.018	0.212	0.169	0.115	0.045	-0.038	0.162	-0.272	0.027
332.0	0.023	-0.017	0.211	0.172	0.115	0.045	-0.035	0.162	-0.272	0.027
333.4	0.023	-0.017	0.215	0.176	0.115	0.043	-0.038	0.158	-0.264	0.027
334.8	0.023	-0.011	0.223	0.184	0.113	0.047	-0.039	0.153	-0.265	0.026
336.2	0.025	-0.004	0.222	0.190	0.114	0.047	-0.041	0.150	-0.267	0.026
337.6	0.025	0.001	0.219	0.191	0.116	0.046	-0.043	0.142	-0.264	0.026
339.0	0.026	0.005	0.220	0.192	0.122	0.048	-0.038	0.143	-0.260	0.025
340.4	0.027	0.001	0.226	0.196	0.126	0.045	-0.037	0.145	-0.259	0.026
341.8	0.027	-0.002	0.226	0.200	0.130	0.044	-0.037	0.139	-0.258	0.025
343.3	0.025	0.001	0.227	0.202	0.131	0.043	-0.036	0.131	-0.259	0.025
344.7	0.023	0.009	0.233	0.205	0.127	0.044	-0.040	0.124	-0.261	0.025
346.1	0.021	0.010	0.242	0.210	0.130	0.048	-0.039	0.122	-0.257	0.024
347.5	0.019	0.011	0.242	0.211	0.131	0.050	-0.041	0.118	-0.255	0.024
348.9	0.018	0.008	0.236	0.211	0.133	0.048	-0.045	0.113	-0.257	0.024
350.3	0.017	0.003	0.236	0.210	0.136	0.044	-0.043	0.107	-0.257	0.024
351.7	0.016	0.002	0.240	0.210	0.137	0.049	-0.045	0.105	-0.254	0.024
353.1	0.016	0.006	0.240	0.213	0.140	0.053	-0.038	0.106	-0.255	0.023
354.5	0.016	0.012	0.239	0.217	0.146	0.055	-0.036	0.103	-0.258	0.024
355.9	0.018	0.016	0.243	0.222	0.150	0.058	-0.038	0.100	-0.255	0.024
357.3	0.018	0.014	0.244	0.223	0.152	0.059	-0.037	0.104	-0.253	0.025
358.7	0.018	0.010	0.244	0.223	0.150	0.061	-0.038	0.102	-0.256	0.024

Table 11. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0396$, $\mu = 0.050$, $\alpha_s = 0.0°$, $\theta = 9.0°$, $A_1 = -1.5°$, $B_1 = 1.3°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.063	0.085	-0.003	0.054	0.228	-0.008	0.040	-0.076	0.207	0.323	0.204
1.5	0.066	0.090	0.000	0.057	0.230	-0.008	0.048	-0.074	0.213	0.330	0.204
2.9	0.072	0.092	0.003	0.061	0.233	-0.009	0.055	-0.073	0.223	0.335	0.206
4.3	0.074	0.096	0.006	0.062	0.235	-0.007	0.061	-0.071	0.235	0.344	0.211
5.8	0.077	0.100	0.010	0.067	0.240	-0.004	0.072	-0.067	0.246	0.355	0.218
7.2	0.080	0.106	0.018	0.071	0.242	-0.004	0.082	-0.064	0.253	0.363	0.225
8.6	0.087	0.116	0.024	0.075	0.246	-0.007	0.085	-0.060	0.265	0.373	0.231
10.0	0.096	0.122	0.031	0.082	0.246	-0.006	0.086	-0.056	0.278	0.384	0.236
11.4	0.104	0.130	0.043	0.090	0.251	-0.004	0.091	-0.053	0.290	0.395	0.242
12.8	0.114	0.144	0.054	0.099	0.257	-0.005	0.101	-0.051	0.304	0.406	0.248
14.2	0.126	0.155	0.058	0.102	0.258	-0.002	0.105	-0.050	0.316	0.417	0.256
15.6	0.132	0.159	0.066	0.107	0.257	-0.005	0.102	-0.047	0.327	0.426	0.262
17.0	0.141	0.174	0.075	0.112	0.257	-0.007	0.101	-0.045	0.340	0.439	0.272
18.4	0.156	0.182	0.080	0.115	0.260	-0.007	0.105	-0.042	0.353	0.455	0.279
19.8	0.161	0.194	0.092	0.125	0.260	-0.007	0.109	-0.037	0.361	0.472	0.282
21.2	0.175	0.209	0.101	0.132	0.261	-0.008	0.114	-0.032	0.372	0.486	0.285
22.6	0.183	0.212	0.107	0.133	0.264	-0.007	0.113	-0.027	0.388	0.494	0.287
24.0	0.190	0.226	0.116	0.137	0.268	-0.004	0.112	-0.021	0.400	0.498	0.291
25.4	0.201	0.234	0.122	0.142	0.269	-0.004	0.115	-0.015	0.412	0.505	0.287
26.8	0.207	0.245	0.128	0.146	0.269	-0.003	0.115	-0.009	0.423	0.512	0.282
28.3	0.217	0.248	0.132	0.150	0.271	-0.002	0.108	0.001	0.429	0.513	0.278
29.7	0.218	0.253	0.136	0.155	0.270	-0.004	0.101	0.009	0.422	0.499	0.277
31.1	0.225	0.263	0.141	0.157	0.270	-0.007	0.088	0.011	0.393	0.468	0.267
32.5	0.227	0.260	0.140	0.160	0.269	-0.007	0.078	0.010	0.362	0.452	0.259
33.9	0.224	0.264	0.141	0.160	0.267	-0.007	0.075	0.007	0.347	0.457	0.259
35.3	0.228	0.264	0.141	0.161	0.268	-0.007	0.064	0.008	0.335	0.444	0.254
36.7	0.223	0.259	0.141	0.161	0.269	-0.007	0.048	0.009	0.325	0.426	0.263
38.1	0.222	0.255	0.137	0.162	0.268	-0.009	0.033	0.008	0.312	0.427	0.258
39.5	0.215	0.255	0.135	0.157	0.265	-0.011	0.025	0.003	0.298	0.429	0.250
40.9	0.214	0.252	0.135	0.156	0.265	-0.014	0.024	-0.002	0.298	0.422	0.245
42.3	0.207	0.242	0.134	0.156	0.266	-0.015	0.021	-0.002	0.290	0.426	0.232
43.7	0.196	0.233	0.131	0.156	0.266	-0.016	0.018	0.000	0.282	0.422	0.222
45.1	0.192	0.230	0.122	0.150	0.266	-0.015	0.014	0.004	0.277	0.410	0.234
46.5	0.182	0.219	0.122	0.145	0.264	-0.015	0.014	0.006	0.273	0.400	0.241
47.9	0.172	0.207	0.114	0.146	0.264	-0.017	0.017	0.011	0.275	0.395	0.234
49.3	0.164	0.203	0.109	0.135	0.264	-0.017	0.018	0.021	0.269	0.397	0.242
50.8	0.159	0.197	0.109	0.131	0.265	-0.016	0.018	0.031	0.262	0.401	0.244
52.2	0.158	0.196	0.102	0.133	0.263	-0.014	0.013	0.034	0.258	0.390	0.242
53.6	0.152	0.184	0.095	0.127	0.262	-0.014	0.013	0.034	0.253	0.375	0.248
55.0	0.137	0.169	0.088	0.123	0.263	-0.015	0.006	0.033	0.248	0.362	0.244
56.4	0.130	0.164	0.081	0.116	0.264	-0.016	-0.003	0.025	0.232	0.349	0.238
57.8	0.124	0.157	0.076	0.107	0.264	-0.015	-0.010	0.014	0.219	0.342	0.230
59.2	0.120	0.151	0.069	0.101	0.261	-0.013	-0.016	0.006	0.214	0.337	0.231
60.6	0.113	0.139	0.063	0.096	0.262	-0.012	-0.020	-0.001	0.206	0.336	0.242

Table 11. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.100	0.127	0.056	0.094	0.263	-0.012	-0.024	-0.008	0.199	0.337	0.241
63.4	0.095	0.123	0.050	0.085	0.263	-0.014	-0.028	-0.021	0.190	0.337	0.237
64.8	0.091	0.121	0.048	0.078	0.264	-0.013	-0.030	-0.034	0.183	0.335	0.232
66.2	0.088	0.115	0.043	0.076	0.263	-0.010	-0.031	-0.040	0.178	0.332	0.227
67.6	0.085	0.108	0.038	0.069	0.261	-0.011	-0.032	-0.046	0.174	0.328	0.225
69.0	0.074	0.100	0.032	0.063	0.262	-0.014	-0.033	-0.054	0.173	0.327	0.227
70.4	0.070	0.097	0.026	0.055	0.260	-0.014	-0.034	-0.065	0.169	0.324	0.227
71.8	0.070	0.094	0.024	0.052	0.259	-0.012	-0.030	-0.073	0.167	0.321	0.229
73.3	0.066	0.089	0.020	0.048	0.261	-0.011	-0.029	-0.076	0.167	0.323	0.227
74.7	0.062	0.088	0.016	0.047	0.258	-0.012	-0.028	-0.079	0.162	0.325	0.225
76.1	0.061	0.083	0.015	0.047	0.257	-0.017	-0.023	-0.082	0.158	0.322	0.228
77.5	0.057	0.079	0.012	0.041	0.255	-0.020	-0.018	-0.084	0.161	0.317	0.226
78.9	0.054	0.078	0.008	0.037	0.254	-0.017	-0.013	-0.085	0.166	0.316	0.226
80.3	0.054	0.079	0.005	0.033	0.253	-0.017	-0.012	-0.088	0.169	0.321	0.229
81.7	0.055	0.075	0.001	0.033	0.252	-0.018	-0.010	-0.092	0.174	0.324	0.226
83.1	0.052	0.070	0.003	0.032	0.250	-0.023	-0.005	-0.093	0.178	0.325	0.230
84.5	0.050	0.075	0.003	0.030	0.248	-0.022	0.001	-0.092	0.183	0.328	0.238
85.9	0.054	0.076	-0.001	0.028	0.247	-0.020	0.007	-0.090	0.185	0.332	0.236
87.3	0.055	0.072	-0.001	0.030	0.248	-0.022	0.015	-0.087	0.191	0.336	0.235
88.7	0.053	0.074	-0.001	0.031	0.249	-0.023	0.024	-0.086	0.201	0.338	0.237
90.1	0.056	0.077	0.003	0.036	0.248	-0.025	0.030	-0.090	0.211	0.346	0.238
91.5	0.058	0.078	0.004	0.036	0.247	-0.024	0.038	-0.090	0.223	0.353	0.241
92.9	0.060	0.082	0.007	0.037	0.252	-0.018	0.046	-0.086	0.235	0.361	0.243
94.3	0.064	0.087	0.013	0.043	0.252	-0.018	0.053	-0.084	0.248	0.369	0.244
95.8	0.069	0.090	0.012	0.046	0.255	-0.019	0.063	-0.081	0.258	0.380	0.246
97.2	0.069	0.091	0.017	0.053	0.255	-0.018	0.068	-0.079	0.270	0.388	0.255
98.6	0.073	0.099	0.022	0.060	0.255	-0.017	0.073	-0.078	0.286	0.399	0.260
100.0	0.079	0.103	0.025	0.064	0.258	-0.019	0.080	-0.075	0.300	0.411	0.265
101.4	0.086	0.113	0.033	0.073	0.258	-0.020	0.082	-0.072	0.312	0.420	0.272
102.8	0.095	0.118	0.034	0.077	0.257	-0.021	0.084	-0.067	0.325	0.429	0.283
104.2	0.097	0.120	0.037	0.077	0.255	-0.022	0.091	-0.063	0.339	0.438	0.292
105.6	0.103	0.130	0.043	0.084	0.255	-0.022	0.099	-0.062	0.353	0.450	0.293
107.0	0.113	0.136	0.042	0.085	0.253	-0.025	0.102	-0.058	0.367	0.460	0.297
108.4	0.117	0.138	0.046	0.088	0.252	-0.027	0.101	-0.054	0.383	0.472	0.300
109.8	0.121	0.152	0.053	0.099	0.252	-0.030	0.101	-0.051	0.400	0.489	0.306
111.2	0.133	0.153	0.052	0.100	0.250	-0.030	0.102	-0.048	0.418	0.501	0.317
112.6	0.128	0.151	0.060	0.107	0.249	-0.033	0.101	-0.045	0.428	0.509	0.322
114.0	0.134	0.166	0.065	0.111	0.248	-0.036	0.100	-0.041	0.433	0.518	0.322
115.4	0.145	0.167	0.063	0.111	0.248	-0.036	0.093	-0.033	0.443	0.531	0.318
116.8	0.142	0.169	0.068	0.116	0.248	-0.036	0.094	-0.025	0.453	0.542	0.312
118.3	0.148	0.177	0.073	0.123	0.248	-0.036	0.096	-0.020	0.459	0.547	0.306
119.7	0.151	0.175	0.073	0.126	0.247	-0.038	0.094	-0.013	0.461	0.538	0.306
121.1	0.156	0.183	0.074	0.126	0.245	-0.040	0.093	-0.007	0.451	0.512	0.300
122.5	0.158	0.185	0.079	0.136	0.240	-0.042	0.081	-0.002	0.426	0.498	0.284

Table 11. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.152	0.180	0.081	0.137	0.240	-0.045	0.071	0.002	0.411	0.500	0.277
125.3	0.164	0.195	0.081	0.137	0.242	-0.043	0.063	0.006	0.399	0.488	0.269
126.7	0.166	0.189	0.085	0.135	0.240	-0.041	0.055	0.008	0.381	0.462	0.265
128.1	0.155	0.185	0.083	0.143	0.241	-0.041	0.049	0.005	0.367	0.439	0.258
129.5	0.165	0.196	0.077	0.142	0.239	-0.043	0.043	0.004	0.346	0.443	0.259
130.9	0.165	0.187	0.087	0.142	0.242	-0.043	0.041	0.006	0.335	0.436	0.257
132.3	0.153	0.184	0.089	0.151	0.241	-0.042	0.035	0.010	0.337	0.422	0.240
133.7	0.157	0.188	0.085	0.150	0.240	-0.044	0.027	0.011	0.337	0.409	0.237
135.1	0.154	0.180	0.087	0.149	0.242	-0.042	0.024	0.010	0.325	0.398	0.242
136.5	0.148	0.180	0.084	0.153	0.239	-0.042	0.023	0.012	0.318	0.395	0.241
137.9	0.140	0.174	0.086	0.155	0.240	-0.041	0.017	0.017	0.318	0.393	0.243
139.3	0.144	0.175	0.082	0.159	0.238	-0.039	0.017	0.020	0.313	0.395	0.243
140.8	0.142	0.171	0.075	0.151	0.239	-0.040	0.018	0.027	0.303	0.391	0.244
142.2	0.128	0.157	0.074	0.147	0.239	-0.038	0.017	0.034	0.291	0.376	0.242
143.6	0.123	0.154	0.068	0.150	0.242	-0.038	0.014	0.032	0.288	0.371	0.242
145.0	0.122	0.152	0.065	0.145	0.241	-0.036	0.006	0.029	0.274	0.372	0.238
146.4	0.118	0.146	0.063	0.145	0.239	-0.037	0.000	0.025	0.263	0.361	0.229
147.8	0.107	0.135	0.056	0.141	0.239	-0.037	-0.005	0.020	0.259	0.345	0.229
149.2	0.100	0.126	0.047	0.135	0.241	-0.035	-0.009	0.012	0.249	0.333	0.228
150.6	0.093	0.120	0.043	0.130	0.241	-0.034	-0.013	0.001	0.235	0.322	0.225
152.0	0.086	0.113	0.039	0.129	0.240	-0.034	-0.018	-0.007	0.225	0.314	0.222
153.4	0.085	0.112	0.033	0.126	0.238	-0.033	-0.020	-0.014	0.219	0.310	0.222
154.8	0.080	0.104	0.027	0.119	0.240	-0.030	-0.019	-0.018	0.217	0.306	0.222
156.2	0.073	0.097	0.017	0.116	0.241	-0.030	-0.021	-0.025	0.213	0.304	0.217
157.6	0.069	0.093	0.014	0.111	0.241	-0.029	-0.026	-0.036	0.205	0.299	0.215
159.0	0.063	0.088	0.011	0.109	0.240	-0.030	-0.031	-0.047	0.204	0.297	0.213
160.4	0.063	0.087	0.007	0.106	0.237	-0.032	-0.029	-0.054	0.198	0.295	0.209
161.8	0.061	0.083	0.004	0.103	0.236	-0.031	-0.026	-0.058	0.195	0.292	0.203
163.3	0.058	0.080	-0.001	0.100	0.236	-0.030	-0.023	-0.058	0.194	0.291	0.202
164.7	0.053	0.074	-0.004	0.096	0.236	-0.031	-0.020	-0.059	0.189	0.291	0.205
166.1	0.051	0.073	-0.008	0.091	0.237	-0.033	-0.016	-0.064	0.189	0.287	0.208
167.5	0.051	0.072	-0.011	0.089	0.232	-0.035	-0.011	-0.065	0.193	0.281	0.206
168.9	0.050	0.073	-0.011	0.088	0.229	-0.038	-0.008	-0.067	0.194	0.287	0.203
170.3	0.052	0.073	-0.012	0.085	0.228	-0.036	-0.001	-0.070	0.198	0.292	0.204
171.7	0.052	0.071	-0.015	0.082	0.229	-0.035	0.006	-0.071	0.206	0.292	0.207
173.1	0.051	0.073	-0.015	0.080	0.229	-0.036	0.012	-0.072	0.211	0.302	0.214
174.5	0.053	0.073	-0.014	0.081	0.227	-0.035	0.018	-0.071	0.214	0.308	0.212
175.9	0.051	0.071	-0.019	0.076	0.226	-0.035	0.023	-0.069	0.218	0.309	0.212
177.3	0.054	0.073	-0.019	0.076	0.226	-0.034	0.030	-0.067	0.228	0.312	0.222
178.7	0.055	0.074	-0.018	0.076	0.226	-0.034	0.036	-0.066	0.241	0.320	0.227
180.1	0.056	0.074	-0.017	0.077	0.226	-0.033	0.042	-0.066	0.250	0.328	0.229
181.5	0.057	0.073	-0.013	0.079	0.228	-0.033	0.052	-0.067	0.260	0.328	0.237
182.9	0.054	0.077	-0.012	0.075	0.228	-0.030	0.061	-0.064	0.269	0.334	0.244
184.3	0.060	0.082	-0.011	0.073	0.229	-0.030	0.068	-0.062	0.279	0.347	0.245

Table 11. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.064	0.084	-0.006	0.075	0.231	-0.030	0.074	-0.059	0.291	0.361	0.247
187.2	0.065	0.087	-0.003	0.078	0.233	-0.029	0.081	-0.057	0.304	0.374	0.252
188.6	0.068	0.090	0.000	0.083	0.235	-0.031	0.090	-0.054	0.318	0.387	0.256
190.0	0.072	0.098	0.001	0.086	0.234	-0.033	0.097	-0.050	0.336	0.401	0.261
191.4	0.080	0.104	0.005	0.089	0.235	-0.033	0.103	-0.046	0.352	0.414	0.273
192.8	0.084	0.108	0.007	0.092	0.236	-0.033	0.108	-0.043	0.367	0.431	0.285
194.2	0.091	0.115	0.012	0.096	0.236	-0.034	0.108	-0.039	0.387	0.448	0.290
195.6	0.097	0.120	0.015	0.098	0.234	-0.035	0.107	-0.036	0.406	0.463	0.296
197.0	0.103	0.128	0.023	0.101	0.231	-0.036	0.106	-0.035	0.422	0.480	0.301
198.4	0.113	0.139	0.030	0.103	0.232	-0.037	0.111	-0.031	0.438	0.499	0.304
199.8	0.119	0.142	0.028	0.098	0.232	-0.037	0.115	-0.028	0.455	0.519	0.315
201.2	0.122	0.146	0.031	0.099	0.231	-0.035	0.118	-0.024	0.473	0.534	0.326
202.6	0.131	0.154	0.033	0.100	0.229	-0.036	0.119	-0.017	0.488	0.552	0.333
204.0	0.134	0.159	0.037	0.104	0.227	-0.038	0.121	-0.008	0.508	0.568	0.335
205.4	0.137	0.164	0.041	0.108	0.226	-0.037	0.125	-0.001	0.528	0.580	0.334
206.8	0.144	0.170	0.046	0.109	0.226	-0.035	0.125	0.007	0.540	0.594	0.335
208.3	0.151	0.174	0.049	0.111	0.225	-0.035	0.125	0.016	0.549	0.603	0.330
209.7	0.150	0.174	0.045	0.114	0.224	-0.036	0.115	0.025	0.554	0.601	0.324
211.1	0.152	0.178	0.045	0.114	0.223	-0.036	0.103	0.032	0.542	0.591	0.319
212.5	0.158	0.182	0.046	0.116	0.222	-0.037	0.094	0.032	0.522	0.577	0.300
213.9	0.157	0.182	0.047	0.116	0.220	-0.036	0.086	0.032	0.495	0.562	0.301
215.3	0.159	0.182	0.042	0.117	0.218	-0.034	0.079	0.031	0.460	0.537	0.295
216.7	0.153	0.176	0.042	0.107	0.215	-0.034	0.072	0.033	0.449	0.506	0.273
218.1	0.145	0.169	0.038	0.105	0.213	-0.035	0.064	0.034	0.451	0.505	0.279
219.5	0.148	0.171	0.033	0.099	0.212	-0.033	0.061	0.034	0.443	0.503	0.274
220.9	0.143	0.167	0.037	0.098	0.212	-0.033	0.057	0.035	0.423	0.485	0.270
222.3	0.135	0.159	0.036	0.100	0.208	-0.035	0.049	0.040	0.412	0.467	0.257
223.7	0.129	0.154	0.031	0.096	0.206	-0.033	0.047	0.044	0.409	0.446	0.236
225.1	0.127	0.155	0.029	0.091	0.206	-0.030	0.050	0.049	0.389	0.429	0.232
226.5	0.124	0.149	0.031	0.090	0.204	-0.029	0.045	0.056	0.375	0.424	0.239
227.9	0.119	0.144	0.026	0.090	0.205	-0.030	0.042	0.056	0.368	0.412	0.244
229.3	0.110	0.135	0.023	0.082	0.204	-0.029	0.041	0.058	0.356	0.401	0.240
230.8	0.107	0.132	0.017	0.078	0.204	-0.028	0.036	0.062	0.345	0.394	0.240
232.2	0.108	0.136	0.015	0.075	0.202	-0.028	0.036	0.068	0.332	0.386	0.236
233.6	0.100	0.125	0.017	0.072	0.203	-0.027	0.030	0.069	0.323	0.379	0.227
235.0	0.091	0.115	0.011	0.073	0.203	-0.027	0.021	0.061	0.314	0.362	0.211
236.4	0.092	0.117	0.008	0.067	0.200	-0.028	0.016	0.054	0.302	0.352	0.202
237.8	0.082	0.106	0.008	0.062	0.202	-0.025	0.010	0.046	0.282	0.341	0.201
239.2	0.077	0.101	0.005	0.060	0.203	-0.024	0.002	0.038	0.267	0.332	0.195
240.6	0.073	0.095	0.002	0.059	0.201	-0.024	-0.005	0.028	0.259	0.324	0.191
242.0	0.069	0.094	0.000	0.052	0.201	-0.025	-0.014	0.016	0.253	0.313	0.187
243.4	0.069	0.090	-0.005	0.048	0.201	-0.025	-0.017	0.004	0.241	0.313	0.188
244.8	0.059	0.079	-0.013	0.046	0.201	-0.022	-0.019	-0.009	0.232	0.314	0.189
246.2	0.056	0.077	-0.016	0.039	0.203	-0.022	-0.022	-0.019	0.224	0.311	0.183

Table 11. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.056	0.077	-0.016	0.039	0.204	-0.024	-0.024	-0.029	0.212	0.305	0.180
249.0	0.052	0.074	-0.018	0.039	0.204	-0.023	-0.023	-0.038	0.208	0.302	0.180
250.4	0.049	0.071	-0.019	0.038	0.204	-0.022	-0.022	-0.046	0.205	0.293	0.185
251.8	0.046	0.066	-0.020	0.036	0.205	-0.020	-0.021	-0.054	0.201	0.292	0.189
253.3	0.046	0.069	-0.015	0.034	0.208	-0.018	-0.020	-0.057	0.201	0.294	0.191
254.7	0.047	0.069	-0.016	0.037	0.208	-0.019	-0.018	-0.061	0.198	0.290	0.188
256.1	0.048	0.066	-0.020	0.033	0.205	-0.021	-0.013	-0.066	0.194	0.289	0.185
257.5	0.043	0.065	-0.018	0.032	0.206	-0.021	-0.007	-0.069	0.197	0.286	0.189
258.9	0.046	0.067	-0.020	0.031	0.207	-0.020	-0.001	-0.069	0.206	0.282	0.190
260.3	0.046	0.066	-0.019	0.030	0.207	-0.017	0.004	-0.066	0.209	0.286	0.190
261.7	0.043	0.062	-0.019	0.032	0.208	-0.016	0.008	-0.063	0.205	0.291	0.193
263.1	0.043	0.063	-0.019	0.034	0.209	-0.019	0.014	-0.066	0.212	0.282	0.192
264.5	0.046	0.066	-0.019	0.034	0.208	-0.021	0.024	-0.068	0.217	0.280	0.199
265.9	0.046	0.068	-0.017	0.033	0.207	-0.020	0.034	-0.069	0.223	0.288	0.203
267.3	0.050	0.072	-0.017	0.034	0.207	-0.020	0.039	-0.070	0.232	0.293	0.202
268.7	0.054	0.071	-0.015	0.035	0.209	-0.021	0.043	-0.070	0.236	0.302	0.208
270.1	0.054	0.076	-0.010	0.039	0.209	-0.020	0.052	-0.069	0.243	0.309	0.210
271.5	0.058	0.079	-0.012	0.039	0.211	-0.019	0.063	-0.067	0.249	0.313	0.213
272.9	0.061	0.080	-0.008	0.043	0.209	-0.021	0.072	-0.066	0.257	0.320	0.216
274.3	0.064	0.086	-0.001	0.049	0.210	-0.020	0.082	-0.064	0.270	0.329	0.218
275.8	0.069	0.092	0.000	0.049	0.212	-0.018	0.089	-0.060	0.280	0.335	0.220
277.2	0.073	0.096	0.002	0.049	0.214	-0.017	0.094	-0.058	0.290	0.341	0.223
278.6	0.077	0.098	0.007	0.052	0.213	-0.017	0.102	-0.057	0.301	0.347	0.232
280.0	0.081	0.104	0.010	0.055	0.213	-0.019	0.111	-0.055	0.314	0.354	0.232
281.4	0.085	0.109	0.015	0.058	0.213	-0.018	0.115	-0.050	0.327	0.360	0.232
282.8	0.091	0.115	0.021	0.061	0.214	-0.019	0.118	-0.047	0.336	0.371	0.235
284.2	0.098	0.119	0.019	0.060	0.213	-0.021	0.120	-0.048	0.350	0.385	0.235
285.6	0.100	0.125	0.022	0.066	0.211	-0.024	0.122	-0.048	0.365	0.400	0.234
287.0	0.109	0.132	0.028	0.070	0.211	-0.027	0.118	-0.047	0.380	0.415	0.241
288.4	0.115	0.135	0.031	0.071	0.211	-0.029	0.120	-0.043	0.394	0.427	0.254
289.8	0.117	0.143	0.035	0.072	0.210	-0.030	0.126	-0.040	0.409	0.444	0.261
291.2	0.125	0.150	0.040	0.077	0.208	-0.028	0.127	-0.036	0.422	0.457	0.268
292.6	0.131	0.155	0.042	0.077	0.209	-0.027	0.122	-0.030	0.434	0.466	0.277
294.0	0.138	0.160	0.048	0.082	0.210	-0.027	0.120	-0.023	0.450	0.479	0.274
295.4	0.139	0.163	0.049	0.083	0.211	-0.027	0.120	-0.018	0.461	0.492	0.269
296.8	0.145	0.172	0.052	0.084	0.211	-0.027	0.117	-0.012	0.471	0.502	0.270
298.3	0.151	0.175	0.056	0.089	0.211	-0.027	0.111	-0.005	0.469	0.499	0.266
299.7	0.153	0.175	0.057	0.090	0.208	-0.027	0.103	0.003	0.458	0.490	0.261
301.1	0.159	0.185	0.061	0.092	0.210	-0.029	0.096	0.007	0.454	0.465	0.253
302.5	0.163	0.189	0.070	0.098	0.212	-0.030	0.087	0.006	0.445	0.441	0.241
303.9	0.166	0.193	0.067	0.100	0.209	-0.030	0.080	0.008	0.420	0.423	0.230
305.3	0.171	0.196	0.071	0.098	0.207	-0.031	0.072	0.014	0.390	0.392	0.216
306.7	0.171	0.194	0.074	0.104	0.209	-0.029	0.064	0.018	0.363	0.395	0.213
308.1	0.169	0.195	0.074	0.104	0.209	-0.029	0.052	0.017	0.342	0.412	0.226

Table 11. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.175	0.204	0.074	0.103	0.210	-0.029	0.050	0.013	0.330	0.411	0.223
310.9	0.178	0.205	0.081	0.105	0.211	-0.027	0.048	0.011	0.326	0.403	0.218
312.3	0.175	0.201	0.082	0.111	0.209	-0.025	0.036	0.012	0.329	0.383	0.207
313.7	0.172	0.198	0.080	0.108	0.207	-0.024	0.030	0.011	0.326	0.371	0.203
315.1	0.163	0.190	0.082	0.107	0.209	-0.022	0.035	0.012	0.319	0.368	0.207
316.5	0.157	0.187	0.077	0.110	0.211	-0.021	0.034	0.019	0.316	0.371	0.209
317.9	0.155	0.188	0.075	0.104	0.213	-0.018	0.031	0.026	0.317	0.374	0.211
319.3	0.159	0.187	0.074	0.105	0.214	-0.018	0.033	0.034	0.318	0.358	0.225
320.8	0.146	0.173	0.072	0.108	0.213	-0.019	0.028	0.044	0.311	0.349	0.226
322.2	0.135	0.168	0.068	0.106	0.214	-0.017	0.021	0.043	0.294	0.359	0.221
323.6	0.137	0.165	0.063	0.101	0.216	-0.016	0.018	0.041	0.274	0.355	0.219
325.0	0.129	0.157	0.063	0.098	0.217	-0.016	0.011	0.038	0.263	0.346	0.220
326.4	0.120	0.146	0.059	0.100	0.215	-0.017	0.006	0.033	0.262	0.336	0.221
327.8	0.106	0.135	0.050	0.095	0.213	-0.016	0.001	0.024	0.249	0.322	0.214
329.2	0.106	0.135	0.043	0.085	0.215	-0.016	-0.005	0.013	0.237	0.315	0.219
330.6	0.104	0.129	0.043	0.083	0.216	-0.014	-0.010	0.005	0.228	0.310	0.218
332.0	0.095	0.121	0.036	0.085	0.218	-0.009	-0.008	0.000	0.217	0.303	0.207
333.4	0.089	0.112	0.030	0.079	0.219	-0.006	-0.009	-0.003	0.212	0.298	0.207
334.8	0.079	0.104	0.024	0.075	0.220	-0.005	-0.014	-0.010	0.207	0.293	0.205
336.2	0.080	0.105	0.019	0.071	0.223	-0.005	-0.019	-0.023	0.201	0.288	0.201
337.6	0.078	0.102	0.019	0.070	0.225	-0.003	-0.024	-0.034	0.196	0.290	0.199
339.0	0.072	0.095	0.015	0.069	0.225	-0.002	-0.022	-0.043	0.187	0.292	0.200
340.4	0.067	0.088	0.012	0.067	0.224	-0.001	-0.019	-0.047	0.180	0.287	0.205
341.8	0.065	0.087	0.011	0.065	0.225	-0.003	-0.020	-0.047	0.177	0.283	0.210
343.3	0.065	0.091	0.008	0.062	0.227	-0.002	-0.021	-0.048	0.177	0.279	0.209
344.7	0.067	0.088	0.005	0.062	0.226	-0.004	-0.018	-0.049	0.176	0.279	0.208
346.1	0.063	0.083	0.005	0.061	0.224	-0.006	-0.010	-0.052	0.173	0.284	0.206
347.5	0.061	0.084	0.001	0.056	0.226	-0.005	-0.003	-0.056	0.172	0.289	0.206
348.9	0.062	0.085	0.001	0.053	0.227	-0.005	-0.004	-0.061	0.179	0.292	0.207
350.3	0.062	0.084	-0.001	0.054	0.225	-0.003	-0.002	-0.067	0.179	0.293	0.209
351.7	0.062	0.081	-0.001	0.052	0.224	-0.003	0.001	-0.069	0.174	0.294	0.206
353.1	0.063	0.084	-0.004	0.052	0.226	-0.005	0.005	-0.072	0.175	0.295	0.199
354.5	0.062	0.081	-0.006	0.053	0.224	-0.008	0.012	-0.077	0.177	0.298	0.202
355.9	0.061	0.082	-0.004	0.053	0.226	-0.010	0.017	-0.078	0.182	0.305	0.201
357.3	0.065	0.084	-0.005	0.054	0.229	-0.007	0.023	-0.075	0.191	0.310	0.199
358.7	0.064	0.082	-0.006	0.053	0.229	-0.007	0.031	-0.076	0.199	0.314	0.203

Table 12. Modified unsteady pressure coefficients around the body at x/l = 0.90. $C_T/\sigma = 0.0396$, $\mu = 0.050$, $\alpha_s = 0.0°$, $\theta = 9.0°$, $A_1 = -1.5°$, $B_1 = 1.3°$.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.039	0.064	0.109	0.073	0.114	0.040	-0.028	-0.062	-0.020	-0.364
1.5	0.038	0.063	0.111	0.073	0.119	0.048	-0.023	-0.063	-0.019	-0.364
2.9	0.038	0.062	0.109	0.072	0.123	0.055	-0.017	-0.062	-0.019	-0.365
4.3	0.037	0.059	0.106	0.072	0.129	0.061	-0.012	-0.059	-0.018	-0.365
5.8	0.035	0.060	0.111	0.075	0.137	0.072	-0.005	-0.058	-0.016	-0.365
7.2	0.034	0.061	0.112	0.076	0.140	0.082	0.005	-0.056	-0.016	-0.365
8.6	0.033	0.058	0.106	0.072	0.136	0.085	0.012	-0.050	-0.014	-0.365
10.0	0.031	0.054	0.101	0.066	0.132	0.086	0.015	-0.046	-0.009	-0.365
11.4	0.030	0.052	0.096	0.061	0.134	0.091	0.021	-0.044	-0.005	-0.364
12.8	0.029	0.047	0.093	0.060	0.135	0.101	0.030	-0.044	-0.002	-0.363
14.2	0.029	0.044	0.091	0.057	0.130	0.105	0.038	-0.042	-0.005	-0.362
15.6	0.030	0.043	0.085	0.051	0.123	0.102	0.040	-0.040	-0.003	-0.362
17.0	0.030	0.038	0.079	0.046	0.120	0.101	0.042	-0.036	-0.001	-0.362
18.4	0.027	0.034	0.074	0.041	0.116	0.105	0.049	-0.032	0.004	-0.362
19.8	0.026	0.030	0.070	0.036	0.114	0.109	0.056	-0.030	0.007	-0.362
21.2	0.027	0.026	0.068	0.034	0.113	0.114	0.064	-0.028	0.004	-0.362
22.6	0.027	0.024	0.064	0.032	0.109	0.113	0.071	-0.023	0.006	-0.361
24.0	0.029	0.024	0.061	0.030	0.105	0.112	0.076	-0.016	0.010	-0.362
25.4	0.028	0.024	0.059	0.028	0.105	0.115	0.082	-0.012	0.015	-0.362
26.8	0.027	0.024	0.058	0.027	0.099	0.115	0.088	-0.006	0.024	-0.362
28.3	0.028	0.023	0.058	0.026	0.089	0.108	0.090	0.006	0.030	-0.362
29.7	0.025	0.020	0.054	0.022	0.079	0.101	0.088	0.015	0.035	-0.361
31.1	0.026	0.018	0.049	0.015	0.067	0.088	0.082	0.015	0.040	-0.361
32.5	0.026	0.013	0.040	0.006	0.059	0.078	0.077	0.013	0.041	-0.361
33.9	0.024	0.007	0.035	0.001	0.056	0.075	0.076	0.012	0.044	-0.361
35.3	0.023	0.005	0.031	-0.001	0.051	0.064	0.070	0.013	0.042	-0.361
36.7	0.022	0.003	0.027	-0.005	0.042	0.048	0.057	0.016	0.043	-0.361
38.1	0.021	0.001	0.026	-0.008	0.031	0.033	0.043	0.014	0.042	-0.361
39.5	0.020	-0.003	0.021	-0.016	0.022	0.025	0.038	0.008	0.041	-0.361
40.9	0.020	-0.009	0.015	-0.021	0.019	0.024	0.036	0.004	0.035	-0.361
42.3	0.017	-0.013	0.011	-0.025	0.018	0.021	0.032	0.003	0.030	-0.361
43.7	0.016	-0.015	0.008	-0.027	0.017	0.018	0.031	0.003	0.031	-0.362
45.1	0.015	-0.014	0.009	-0.025	0.013	0.014	0.029	0.009	0.033	-0.362
46.5	0.014	-0.012	0.008	-0.025	0.012	0.014	0.028	0.010	0.036	-0.362
47.9	0.013	-0.009	0.012	-0.021	0.015	0.017	0.030	0.013	0.039	-0.362
49.3	0.012	-0.006	0.012	-0.019	0.018	0.018	0.032	0.023	0.044	-0.363
50.8	0.013	-0.003	0.016	-0.015	0.020	0.018	0.029	0.036	0.053	-0.363
52.2	0.014	-0.001	0.020	-0.011	0.018	0.013	0.026	0.038	0.063	-0.363
53.6	0.015	0.006	0.029	-0.008	0.019	0.013	0.022	0.040	0.066	-0.362
55.0	0.015	0.008	0.034	-0.004	0.020	0.006	0.012	0.045	0.074	-0.362
56.4	0.013	0.013	0.035	-0.004	0.015	-0.003	0.000	0.031	0.070	-0.362
57.8	0.012	0.014	0.038	-0.002	0.014	-0.010	-0.011	0.024	0.059	-0.362
59.2	0.011	0.015	0.042	-0.002	0.013	-0.016	-0.022	0.020	0.059	-0.361
60.6	0.014	0.016	0.044	-0.001	0.011	-0.020	-0.028	0.012	0.054	-0.360

Table 12. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.015	0.018	0.049	0.002	0.010	-0.024	-0.037	0.006	0.048	-0.360
63.4	0.015	0.020	0.053	0.006	0.010	-0.028	-0.046	-0.007	0.039	-0.360
64.8	0.014	0.020	0.052	0.006	0.009	-0.030	-0.052	-0.019	0.027	-0.360
66.2	0.015	0.023	0.055	0.007	0.011	-0.031	-0.056	-0.024	0.017	-0.360
67.6	0.014	0.025	0.059	0.009	0.014	-0.032	-0.061	-0.028	0.016	-0.360
69.0	0.014	0.029	0.063	0.012	0.016	-0.033	-0.068	-0.036	0.013	-0.361
70.4	0.019	0.030	0.065	0.016	0.020	-0.034	-0.070	-0.049	-0.001	-0.361
71.8	0.015	0.039	0.071	0.022	0.024	-0.030	-0.071	-0.058	-0.010	-0.362
73.3	0.012	0.047	0.082	0.031	0.027	-0.029	-0.074	-0.060	-0.012	-0.363
74.7	0.011	0.047	0.086	0.036	0.030	-0.028	-0.073	-0.062	-0.013	-0.363
76.1	0.013	0.052	0.087	0.039	0.035	-0.023	-0.070	-0.065	-0.015	-0.364
77.5	0.014	0.059	0.090	0.045	0.044	-0.018	-0.068	-0.068	-0.019	-0.365
78.9	0.011	0.061	0.094	0.053	0.050	-0.013	-0.066	-0.069	-0.023	-0.365
80.3	0.011	0.063	0.100	0.059	0.054	-0.012	-0.066	-0.074	-0.026	-0.367
81.7	0.013	0.066	0.104	0.062	0.059	-0.010	-0.064	-0.079	-0.029	-0.367
83.1	0.015	0.069	0.101	0.060	0.066	-0.005	-0.060	-0.078	-0.031	-0.367
84.5	0.014	0.066	0.102	0.062	0.074	0.001	-0.058	-0.078	-0.030	-0.367
85.9	0.010	0.070	0.106	0.068	0.081	0.007	-0.053	-0.078	-0.031	-0.367
87.3	0.007	0.073	0.108	0.074	0.088	0.015	-0.047	-0.074	-0.031	-0.368
88.7	0.007	0.073	0.110	0.076	0.092	0.024	-0.042	-0.072	-0.027	-0.368
90.1	0.008	0.075	0.109	0.077	0.099	0.030	-0.037	-0.079	-0.029	-0.368
91.5	0.008	0.072	0.111	0.079	0.107	0.038	-0.030	-0.080	-0.033	-0.367
92.9	0.008	0.073	0.116	0.082	0.114	0.046	-0.024	-0.076	-0.034	-0.367
94.3	0.007	0.074	0.116	0.083	0.121	0.053	-0.017	-0.072	-0.029	-0.367
95.8	0.005	0.073	0.114	0.081	0.126	0.063	-0.011	-0.068	-0.026	-0.367
97.2	0.005	0.071	0.110	0.080	0.132	0.068	-0.007	-0.069	-0.029	-0.367
98.6	0.002	0.070	0.108	0.079	0.135	0.073	-0.002	-0.068	-0.029	-0.367
100.0	0.000	0.069	0.107	0.075	0.132	0.080	0.006	-0.066	-0.025	-0.367
101.4	-0.001	0.065	0.103	0.070	0.128	0.082	0.013	-0.063	-0.023	-0.367
102.8	-0.004	0.060	0.096	0.065	0.125	0.084	0.017	-0.057	-0.021	-0.367
104.2	-0.005	0.054	0.088	0.058	0.127	0.091	0.021	-0.053	-0.020	-0.367
105.6	-0.006	0.048	0.082	0.055	0.128	0.099	0.030	-0.052	-0.017	-0.367
107.0	-0.010	0.045	0.081	0.051	0.121	0.102	0.038	-0.051	-0.015	-0.368
108.4	-0.012	0.045	0.079	0.046	0.114	0.101	0.041	-0.047	-0.014	-0.368
109.8	-0.016	0.039	0.073	0.039	0.109	0.101	0.042	-0.042	-0.013	-0.367
111.2	-0.019	0.033	0.066	0.034	0.103	0.102	0.046	-0.038	-0.012	-0.368
112.6	-0.022	0.029	0.063	0.029	0.096	0.101	0.053	-0.039	-0.011	-0.367
114.0	-0.024	0.024	0.060	0.024	0.089	0.100	0.059	-0.035	-0.008	-0.367
115.4	-0.026	0.021	0.055	0.019	0.081	0.093	0.060	-0.029	-0.001	-0.368
116.8	-0.029	0.019	0.048	0.012	0.080	0.094	0.062	-0.021	0.006	-0.368
118.3	-0.032	0.014	0.045	0.011	0.081	0.096	0.070	-0.014	0.013	-0.368
119.7	-0.035	0.011	0.046	0.011	0.075	0.094	0.073	-0.010	0.016	-0.369
121.1	-0.039	0.013	0.044	0.010	0.071	0.093	0.077	-0.005	0.017	-0.368
122.5	-0.041	0.015	0.044	0.008	0.063	0.081	0.071	0.001	0.023	-0.368

Table 12. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	-0.043	0.012	0.038	0.004	0.055	0.071	0.064	0.008	0.034	-0.368
125.3	-0.046	0.009	0.035	0.000	0.048	0.063	0.063	0.011	0.039	-0.367
126.7	-0.046	0.008	0.029	-0.006	0.043	0.055	0.056	0.014	0.040	-0.367
128.1	-0.047	0.000	0.023	-0.010	0.040	0.049	0.052	0.008	0.037	-0.367
129.5	-0.047	-0.001	0.022	-0.011	0.036	0.043	0.047	0.007	0.033	-0.366
130.9	-0.048	0.001	0.022	-0.011	0.036	0.041	0.045	0.012	0.038	-0.366
132.3	-0.049	0.000	0.022	-0.014	0.034	0.035	0.042	0.016	0.041	-0.365
133.7	-0.047	-0.002	0.017	-0.018	0.029	0.027	0.037	0.018	0.041	-0.364
135.1	-0.048	-0.006	0.015	-0.021	0.026	0.024	0.034	0.016	0.040	-0.365
136.5	-0.049	-0.006	0.016	-0.021	0.027	0.023	0.031	0.017	0.039	-0.365
137.9	-0.049	-0.004	0.018	-0.017	0.025	0.017	0.027	0.026	0.045	-0.365
139.3	-0.052	-0.001	0.022	-0.015	0.024	0.017	0.028	0.029	0.051	-0.365
140.8	-0.051	0.005	0.025	-0.010	0.027	0.018	0.027	0.038	0.055	-0.365
142.2	-0.050	0.007	0.031	-0.004	0.028	0.017	0.021	0.046	0.064	-0.366
143.6	-0.048	0.010	0.033	-0.002	0.027	0.014	0.013	0.045	0.069	-0.366
145.0	-0.047	0.013	0.036	-0.001	0.024	0.006	0.003	0.044	0.071	-0.367
146.4	-0.048	0.016	0.035	-0.001	0.020	0.000	-0.004	0.036	0.069	-0.367
147.8	-0.048	0.023	0.039	0.004	0.020	-0.005	-0.013	0.034	0.066	-0.367
149.2	-0.047	0.027	0.047	0.011	0.022	-0.009	-0.024	0.029	0.064	-0.367
150.6	-0.044	0.027	0.045	0.011	0.021	-0.013	-0.031	0.018	0.059	-0.367
152.0	-0.037	0.030	0.051	0.013	0.022	-0.018	-0.037	0.010	0.052	-0.367
153.4	-0.037	0.030	0.054	0.017	0.022	-0.020	-0.042	0.003	0.044	-0.368
154.8	-0.038	0.034	0.059	0.020	0.023	-0.019	-0.047	0.003	0.046	-0.369
156.2	-0.034	0.036	0.061	0.022	0.027	-0.021	-0.050	-0.005	0.045	-0.369
157.6	-0.031	0.037	0.061	0.023	0.025	-0.026	-0.057	-0.016	0.034	-0.370
159.0	-0.030	0.038	0.064	0.026	0.026	-0.031	-0.064	-0.026	0.024	-0.370
160.4	-0.030	0.041	0.068	0.030	0.029	-0.029	-0.069	-0.034	0.018	-0.371
161.8	-0.028	0.049	0.076	0.037	0.034	-0.026	-0.067	-0.036	0.012	-0.372
163.3	-0.027	0.049	0.081	0.044	0.043	-0.023	-0.065	-0.035	0.011	-0.373
164.7	-0.025	0.050	0.081	0.045	0.047	-0.020	-0.069	-0.037	0.012	-0.373
166.1	-0.021	0.058	0.089	0.047	0.051	-0.016	-0.066	-0.043	0.010	-0.374
167.5	-0.023	0.064	0.099	0.057	0.058	-0.011	-0.065	-0.046	0.007	-0.374
168.9	-0.023	0.072	0.110	0.069	0.068	-0.008	-0.066	-0.048	0.004	-0.375
170.3	-0.017	0.078	0.116	0.076	0.074	-0.001	-0.060	-0.049	0.001	-0.375
171.7	-0.009	0.080	0.119	0.082	0.082	0.006	-0.056	-0.049	-0.001	-0.375
173.1	-0.002	0.080	0.121	0.085	0.091	0.012	-0.053	-0.053	-0.001	-0.374
174.5	0.000	0.084	0.123	0.087	0.095	0.018	-0.049	-0.053	0.001	-0.374
175.9	-0.002	0.088	0.128	0.092	0.103	0.023	-0.042	-0.050	0.001	-0.375
177.3	-0.004	0.084	0.127	0.094	0.112	0.030	-0.039	-0.050	0.000	-0.375
178.7	0.002	0.085	0.128	0.096	0.120	0.036	-0.035	-0.049	-0.001	-0.374
180.1	0.004	0.085	0.131	0.099	0.129	0.042	-0.028	-0.051	-0.001	-0.373
181.5	0.005	0.084	0.134	0.102	0.138	0.052	-0.023	-0.052	-0.004	-0.373
182.9	0.006	0.087	0.136	0.103	0.146	0.061	-0.015	-0.049	-0.002	-0.373
184.3	0.006	0.086	0.134	0.102	0.153	0.068	-0.008	-0.048	0.001	-0.373

Table 12. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.007	0.083	0.133	0.100	0.157	0.074	-0.003	-0.047	0.000	-0.372
187.2	0.006	0.081	0.132	0.098	0.160	0.081	0.003	-0.045	0.002	-0.372
188.6	0.007	0.077	0.127	0.095	0.163	0.090	0.010	-0.045	0.002	-0.372
190.0	0.009	0.074	0.124	0.090	0.163	0.097	0.017	-0.040	0.003	-0.372
191.4	0.011	0.071	0.122	0.087	0.162	0.103	0.023	-0.034	0.007	-0.372
192.8	0.013	0.067	0.117	0.082	0.157	0.108	0.030	-0.032	0.009	-0.372
194.2	0.012	0.061	0.113	0.076	0.151	0.108	0.034	-0.030	0.009	-0.372
195.6	0.010	0.055	0.104	0.067	0.145	0.107	0.037	-0.029	0.011	-0.372
197.0	0.010	0.049	0.098	0.060	0.138	0.106	0.043	-0.026	0.012	-0.372
198.4	0.009	0.044	0.091	0.054	0.135	0.111	0.049	-0.022	0.013	-0.372
199.8	0.009	0.039	0.085	0.050	0.132	0.115	0.055	-0.020	0.014	-0.372
201.2	0.009	0.032	0.082	0.048	0.129	0.118	0.064	-0.018	0.016	-0.372
202.6	0.008	0.031	0.077	0.044	0.124	0.119	0.072	-0.012	0.016	-0.372
204.0	0.009	0.030	0.074	0.041	0.124	0.121	0.078	-0.004	0.021	-0.372
205.4	0.009	0.025	0.069	0.038	0.123	0.125	0.087	0.002	0.028	-0.371
206.8	0.009	0.024	0.066	0.036	0.119	0.125	0.096	0.010	0.035	-0.371
208.3	0.008	0.022	0.064	0.033	0.112	0.125	0.100	0.021	0.044	-0.371
209.7	0.007	0.022	0.065	0.030	0.102	0.115	0.101	0.029	0.051	-0.370
211.1	0.007	0.019	0.058	0.023	0.090	0.103	0.093	0.035	0.056	-0.369
212.5	0.008	0.014	0.051	0.014	0.081	0.094	0.089	0.038	0.061	-0.367
213.9	0.009	0.009	0.048	0.010	0.074	0.086	0.085	0.037	0.064	-0.365
215.3	0.009	0.005	0.044	0.005	0.067	0.079	0.078	0.039	0.062	-0.365
216.7	0.009	0.003	0.038	0.001	0.062	0.072	0.076	0.039	0.062	-0.364
218.1	0.011	0.000	0.033	-0.004	0.055	0.064	0.073	0.040	0.062	-0.364
219.5	0.010	-0.005	0.030	-0.008	0.050	0.061	0.073	0.040	0.062	-0.363
220.9	0.008	-0.011	0.023	-0.012	0.047	0.057	0.070	0.039	0.063	-0.363
222.3	0.009	-0.014	0.023	-0.013	0.043	0.049	0.064	0.046	0.063	-0.362
223.7	0.008	-0.012	0.022	-0.013	0.038	0.047	0.063	0.049	0.066	-0.362
225.1	0.008	-0.010	0.022	-0.012	0.039	0.050	0.067	0.054	0.070	-0.361
226.5	0.007	-0.009	0.022	-0.013	0.040	0.045	0.061	0.062	0.076	-0.361
227.9	0.008	-0.008	0.023	-0.013	0.037	0.042	0.057	0.061	0.080	-0.361
229.3	0.009	-0.008	0.021	-0.015	0.036	0.041	0.056	0.064	0.078	-0.362
230.8	0.010	-0.006	0.026	-0.013	0.034	0.036	0.053	0.072	0.085	-0.362
232.2	0.012	0.001	0.033	-0.007	0.036	0.036	0.050	0.079	0.094	-0.362
233.6	0.011	0.003	0.035	-0.005	0.036	0.030	0.040	0.081	0.102	-0.362
235.0	0.012	0.005	0.039	-0.003	0.033	0.021	0.029	0.074	0.101	-0.362
236.4	0.015	0.007	0.041	0.000	0.030	0.016	0.022	0.067	0.096	-0.362
237.8	0.015	0.010	0.043	0.000	0.028	0.010	0.011	0.059	0.088	-0.362
239.2	0.017	0.009	0.044	0.002	0.028	0.002	0.000	0.054	0.082	-0.362
240.6	0.017	0.006	0.042	0.000	0.023	-0.005	-0.014	0.045	0.077	-0.362
242.0	0.019	0.013	0.049	0.003	0.020	-0.014	-0.024	0.033	0.070	-0.362
243.4	0.017	0.018	0.053	0.010	0.019	-0.017	-0.033	0.021	0.062	-0.363
244.8	0.017	0.019	0.054	0.013	0.022	-0.019	-0.041	0.008	0.052	-0.363
246.2	0.023	0.021	0.056	0.014	0.026	-0.022	-0.048	-0.001	0.042	-0.363

Table 12. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.024	0.023	0.059	0.017	0.027	-0.024	-0.053	-0.012	0.034	-0.364
249.0	0.023	0.024	0.062	0.021	0.029	-0.023	-0.058	-0.020	0.025	-0.364
250.4	0.024	0.026	0.063	0.024	0.032	-0.022	-0.061	-0.027	0.018	-0.365
251.8	0.024	0.032	0.071	0.028	0.037	-0.021	-0.060	-0.035	0.013	-0.365
253.3	0.022	0.046	0.086	0.039	0.044	-0.020	-0.061	-0.039	0.007	-0.366
254.7	0.019	0.052	0.101	0.054	0.052	-0.018	-0.063	-0.042	0.003	-0.366
256.1	0.024	0.049	0.097	0.055	0.059	-0.013	-0.062	-0.046	0.000	-0.367
257.5	0.032	0.048	0.091	0.050	0.064	-0.007	-0.059	-0.050	-0.004	-0.367
258.9	0.031	0.052	0.097	0.055	0.072	-0.001	-0.053	-0.051	-0.007	-0.368
260.3	0.024	0.060	0.107	0.067	0.079	0.004	-0.050	-0.047	-0.007	-0.368
261.7	0.022	0.063	0.112	0.073	0.085	0.008	-0.047	-0.048	-0.007	-0.369
263.1	0.028	0.068	0.115	0.078	0.095	0.014	-0.045	-0.052	-0.007	-0.369
264.5	0.032	0.071	0.119	0.085	0.105	0.024	-0.041	-0.053	-0.007	-0.369
265.9	0.032	0.071	0.120	0.087	0.113	0.034	-0.037	-0.053	-0.009	-0.369
267.3	0.033	0.070	0.120	0.088	0.120	0.039	-0.033	-0.057	-0.013	-0.369
268.7	0.036	0.072	0.124	0.092	0.128	0.043	-0.027	-0.058	-0.016	-0.369
270.1	0.036	0.071	0.124	0.096	0.136	0.052	-0.022	-0.056	-0.014	-0.369
271.5	0.036	0.071	0.126	0.099	0.144	0.063	-0.017	-0.055	-0.017	-0.369
272.9	0.038	0.071	0.123	0.099	0.151	0.072	-0.009	-0.055	-0.017	-0.369
274.3	0.040	0.070	0.122	0.100	0.157	0.082	-0.001	-0.055	-0.015	-0.369
275.8	0.040	0.068	0.120	0.099	0.161	0.089	0.005	-0.050	-0.015	-0.368
277.2	0.040	0.067	0.116	0.096	0.165	0.094	0.010	-0.047	-0.013	-0.369
278.6	0.042	0.062	0.114	0.092	0.169	0.102	0.016	-0.049	-0.011	-0.369
280.0	0.042	0.057	0.111	0.088	0.169	0.111	0.023	-0.049	-0.012	-0.369
281.4	0.043	0.056	0.109	0.085	0.164	0.115	0.030	-0.045	-0.010	-0.370
282.8	0.042	0.050	0.104	0.078	0.160	0.118	0.035	-0.042	-0.006	-0.370
284.2	0.043	0.047	0.101	0.074	0.155	0.120	0.038	-0.042	-0.007	-0.369
285.6	0.042	0.042	0.095	0.066	0.148	0.122	0.041	-0.042	-0.010	-0.369
287.0	0.041	0.036	0.087	0.058	0.137	0.118	0.046	-0.042	-0.009	-0.369
288.4	0.042	0.032	0.080	0.051	0.135	0.120	0.050	-0.038	-0.009	-0.369
289.8	0.041	0.027	0.073	0.048	0.132	0.126	0.057	-0.034	-0.008	-0.369
291.2	0.043	0.022	0.070	0.043	0.125	0.127	0.066	-0.032	-0.009	-0.369
292.6	0.046	0.022	0.066	0.038	0.117	0.122	0.072	-0.027	-0.007	-0.368
294.0	0.048	0.017	0.059	0.031	0.109	0.120	0.075	-0.019	-0.002	-0.367
295.4	0.047	0.012	0.055	0.026	0.105	0.120	0.079	-0.014	0.005	-0.367
296.8	0.046	0.010	0.053	0.023	0.100	0.117	0.084	-0.008	0.013	-0.367
298.3	0.042	0.007	0.048	0.019	0.092	0.111	0.086	0.001	0.019	-0.368
299.7	0.041	0.005	0.045	0.015	0.084	0.103	0.084	0.007	0.023	-0.367
301.1	0.039	0.005	0.043	0.012	0.076	0.096	0.083	0.009	0.025	-0.367
302.5	0.040	0.002	0.038	0.007	0.069	0.087	0.080	0.007	0.028	-0.366
303.9	0.040	-0.002	0.033	0.003	0.064	0.080	0.076	0.011	0.033	-0.365
305.3	0.039	-0.006	0.029	-0.001	0.059	0.072	0.075	0.017	0.035	-0.365
306.7	0.037	-0.008	0.025	-0.005	0.051	0.064	0.069	0.021	0.037	-0.365
308.1	0.035	-0.010	0.022	-0.009	0.041	0.052	0.061	0.021	0.038	-0.364

Table 12. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.033	-0.015	0.012	-0.017	0.036	0.050	0.059	0.018	0.039	-0.365
310.9	0.034	-0.019	0.010	-0.020	0.035	0.048	0.060	0.012	0.034	-0.365
312.3	0.033	-0.023	0.009	-0.020	0.028	0.036	0.048	0.015	0.031	-0.365
313.7	0.033	-0.023	0.006	-0.023	0.022	0.030	0.043	0.016	0.035	-0.365
315.1	0.033	-0.025	0.005	-0.025	0.024	0.035	0.048	0.013	0.032	-0.365
316.5	0.030	-0.025	0.004	-0.026	0.027	0.034	0.046	0.024	0.033	-0.365
317.9	0.027	-0.024	0.010	-0.023	0.024	0.031	0.045	0.032	0.043	-0.366
319.3	0.027	-0.022	0.011	-0.020	0.026	0.033	0.045	0.040	0.049	-0.366
320.8	0.028	-0.016	0.014	-0.016	0.028	0.028	0.039	0.052	0.061	-0.367
322.2	0.026	-0.011	0.021	-0.012	0.026	0.021	0.035	0.048	0.069	-0.368
323.6	0.025	-0.010	0.021	-0.012	0.023	0.018	0.028	0.047	0.069	-0.368
325.0	0.026	-0.010	0.019	-0.013	0.020	0.011	0.018	0.049	0.070	-0.367
326.4	0.027	-0.006	0.023	-0.009	0.019	0.006	0.008	0.046	0.070	-0.366
327.8	0.025	-0.006	0.022	-0.009	0.018	0.001	-0.003	0.037	0.066	-0.365
329.2	0.026	-0.004	0.021	-0.012	0.014	-0.005	-0.013	0.027	0.059	-0.365
330.6	0.030	-0.002	0.027	-0.008	0.014	-0.010	-0.019	0.019	0.050	-0.364
332.0	0.029	-0.002	0.029	-0.007	0.016	-0.008	-0.024	0.014	0.044	-0.363
333.4	0.032	0.001	0.033	-0.004	0.019	-0.009	-0.028	0.016	0.047	-0.362
334.8	0.035	0.004	0.039	0.001	0.021	-0.014	-0.034	0.008	0.046	-0.362
336.2	0.036	0.011	0.049	0.006	0.024	-0.019	-0.044	-0.003	0.036	-0.362
337.6	0.036	0.014	0.054	0.012	0.027	-0.024	-0.050	-0.016	0.025	-0.362
339.0	0.037	0.019	0.056	0.013	0.026	-0.022	-0.052	-0.025	0.016	-0.362
340.4	0.040	0.021	0.058	0.014	0.031	-0.019	-0.053	-0.028	0.014	-0.361
341.8	0.040	0.026	0.059	0.017	0.037	-0.020	-0.055	-0.030	0.009	-0.361
343.3	0.041	0.038	0.070	0.027	0.039	-0.021	-0.056	-0.030	0.008	-0.362
344.7	0.039	0.045	0.083	0.041	0.045	-0.018	-0.054	-0.033	0.010	-0.362
346.1	0.039	0.042	0.080	0.042	0.053	-0.010	-0.054	-0.035	0.009	-0.362
347.5	0.047	0.043	0.076	0.039	0.059	-0.003	-0.054	-0.040	0.005	-0.362
348.9	0.049	0.045	0.084	0.043	0.063	-0.004	-0.054	-0.047	0.000	-0.362
350.3	0.042	0.048	0.090	0.049	0.068	-0.002	-0.052	-0.053	-0.005	-0.362
351.7	0.039	0.051	0.092	0.053	0.074	0.001	-0.052	-0.053	-0.010	-0.362
353.1	0.040	0.052	0.094	0.056	0.079	0.005	-0.052	-0.055	-0.011	-0.363
354.5	0.040	0.055	0.097	0.059	0.086	0.012	-0.049	-0.062	-0.014	-0.362
355.9	0.040	0.058	0.097	0.063	0.093	0.017	-0.045	-0.063	-0.018	-0.362
357.3	0.040	0.060	0.103	0.069	0.099	0.023	-0.041	-0.063	-0.019	-0.363
358.7	0.040	0.063	0.108	0.073	0.107	0.031	-0.036	-0.063	-0.021	-0.364

Table 13. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0649$, $\mu = 0.051$, $\alpha_s = 0.0°$, $\theta = 11.9°$, $A_1 = -1.3°$, $B_1 = 1.3°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.037	0.109	0.262	0.453	0.273	-0.008	0.035	-0.104	0.388	0.489	0.389
1.5	0.044	0.114	0.268	0.460	0.276	-0.010	0.045	-0.104	0.402	0.501	0.393
2.9	0.045	0.123	0.271	0.462	0.281	-0.009	0.055	-0.104	0.416	0.513	0.400
4.3	0.048	0.127	0.268	0.464	0.284	-0.007	0.064	-0.100	0.429	0.520	0.409
5.8	0.049	0.134	0.276	0.472	0.284	-0.006	0.076	-0.098	0.449	0.534	0.419
7.2	0.058	0.148	0.288	0.482	0.288	-0.005	0.086	-0.095	0.469	0.547	0.427
8.6	0.070	0.163	0.292	0.489	0.292	-0.007	0.090	-0.090	0.489	0.561	0.431
10.0	0.080	0.172	0.300	0.500	0.297	-0.007	0.098	-0.087	0.509	0.579	0.445
11.4	0.089	0.187	0.315	0.512	0.304	-0.006	0.109	-0.083	0.526	0.592	0.458
12.8	0.109	0.202	0.316	0.515	0.307	-0.007	0.113	-0.080	0.546	0.611	0.473
14.2	0.116	0.209	0.325	0.525	0.307	-0.010	0.116	-0.080	0.568	0.630	0.490
15.6	0.125	0.232	0.343	0.540	0.308	-0.011	0.119	-0.077	0.591	0.649	0.496
17.0	0.138	0.243	0.341	0.535	0.313	-0.009	0.120	-0.072	0.614	0.669	0.507
18.4	0.142	0.255	0.354	0.546	0.314	-0.009	0.120	-0.067	0.638	0.686	0.523
19.8	0.162	0.275	0.368	0.560	0.318	-0.011	0.117	-0.060	0.656	0.705	0.532
21.2	0.176	0.285	0.374	0.564	0.320	-0.013	0.117	-0.055	0.673	0.722	0.543
22.6	0.182	0.300	0.383	0.574	0.321	-0.014	0.114	-0.053	0.692	0.739	0.561
24.0	0.192	0.311	0.392	0.582	0.325	-0.013	0.112	-0.049	0.704	0.766	0.575
25.4	0.202	0.326	0.402	0.591	0.327	-0.012	0.112	-0.040	0.719	0.789	0.584
26.8	0.225	0.345	0.415	0.600	0.329	-0.012	0.109	-0.032	0.736	0.796	0.581
28.3	0.229	0.347	0.420	0.605	0.329	-0.012	0.101	-0.029	0.739	0.801	0.578
29.7	0.227	0.355	0.430	0.616	0.334	-0.011	0.093	-0.026	0.734	0.802	0.577
31.1	0.244	0.375	0.446	0.626	0.338	-0.010	0.086	-0.021	0.712	0.772	0.569
32.5	0.252	0.378	0.450	0.634	0.338	-0.014	0.077	-0.018	0.677	0.744	0.555
33.9	0.256	0.382	0.449	0.635	0.339	-0.013	0.068	-0.015	0.653	0.749	0.548
35.3	0.254	0.377	0.453	0.634	0.342	-0.014	0.057	-0.010	0.638	0.729	0.540
36.7	0.247	0.372	0.453	0.639	0.343	-0.010	0.046	-0.009	0.625	0.693	0.518
38.1	0.261	0.385	0.455	0.639	0.343	-0.010	0.042	-0.012	0.616	0.661	0.523
39.5	0.264	0.381	0.463	0.642	0.342	-0.013	0.033	-0.013	0.595	0.639	0.503
40.9	0.245	0.360	0.461	0.650	0.338	-0.010	0.026	-0.014	0.575	0.631	0.478
42.3	0.238	0.351	0.454	0.646	0.341	-0.010	0.021	-0.010	0.568	0.609	0.485
43.7	0.238	0.351	0.449	0.639	0.341	-0.010	0.021	-0.006	0.554	0.598	0.493
45.1	0.220	0.337	0.449	0.637	0.340	-0.013	0.024	-0.001	0.538	0.591	0.472
46.5	0.212	0.333	0.443	0.637	0.335	-0.014	0.020	0.009	0.535	0.578	0.444
47.9	0.206	0.322	0.438	0.627	0.332	-0.009	0.016	0.016	0.523	0.572	0.448
49.3	0.185	0.304	0.428	0.621	0.334	-0.009	0.012	0.018	0.506	0.563	0.456
50.8	0.175	0.291	0.415	0.616	0.331	-0.008	0.008	0.021	0.490	0.556	0.458
52.2	0.162	0.275	0.406	0.606	0.328	-0.008	0.004	0.023	0.476	0.543	0.449
53.6	0.152	0.259	0.394	0.599	0.328	-0.008	-0.002	0.022	0.469	0.518	0.443
55.0	0.146	0.248	0.382	0.592	0.326	-0.005	-0.008	0.014	0.450	0.505	0.441
56.4	0.123	0.226	0.375	0.584	0.323	-0.005	-0.017	0.008	0.433	0.496	0.433
57.8	0.111	0.213	0.359	0.575	0.320	-0.009	-0.023	0.007	0.416	0.485	0.429
59.2	0.106	0.206	0.345	0.565	0.319	-0.008	-0.031	-0.003	0.406	0.476	0.420
60.6	0.089	0.188	0.338	0.556	0.318	-0.010	-0.036	-0.014	0.399	0.466	0.414

Table 13. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.067	0.170	0.326	0.551	0.312	-0.011	-0.040	-0.022	0.392	0.455	0.410
63.4	0.060	0.160	0.311	0.538	0.309	-0.012	-0.047	-0.034	0.383	0.451	0.400
64.8	0.053	0.145	0.304	0.527	0.310	-0.011	-0.050	-0.049	0.375	0.451	0.397
66.2	0.037	0.136	0.296	0.525	0.304	-0.013	-0.055	-0.060	0.369	0.450	0.385
67.6	0.035	0.126	0.289	0.518	0.302	-0.014	-0.056	-0.067	0.358	0.444	0.378
69.0	0.033	0.119	0.282	0.511	0.300	-0.014	-0.054	-0.075	0.355	0.442	0.392
70.4	0.017	0.106	0.278	0.509	0.297	-0.016	-0.052	-0.083	0.352	0.443	0.394
71.8	0.010	0.102	0.271	0.503	0.294	-0.017	-0.049	-0.090	0.345	0.442	0.391
73.3	0.018	0.103	0.264	0.496	0.297	-0.016	-0.043	-0.095	0.345	0.439	0.389
74.7	0.011	0.089	0.257	0.496	0.296	-0.020	-0.040	-0.100	0.351	0.440	0.386
76.1	0.005	0.086	0.258	0.494	0.291	-0.022	-0.039	-0.104	0.356	0.439	0.387
77.5	0.009	0.084	0.259	0.491	0.289	-0.021	-0.037	-0.109	0.356	0.446	0.384
78.9	0.006	0.078	0.254	0.485	0.287	-0.024	-0.033	-0.115	0.354	0.452	0.383
80.3	0.002	0.075	0.251	0.482	0.285	-0.029	-0.031	-0.121	0.353	0.449	0.381
81.7	0.003	0.070	0.256	0.485	0.284	-0.029	-0.024	-0.121	0.352	0.455	0.388
83.1	0.000	0.075	0.258	0.484	0.286	-0.030	-0.014	-0.122	0.356	0.456	0.390
84.5	0.002	0.075	0.255	0.483	0.281	-0.036	-0.011	-0.127	0.370	0.456	0.385
85.9	0.006	0.076	0.257	0.480	0.276	-0.038	-0.006	-0.125	0.376	0.460	0.395
87.3	0.006	0.077	0.263	0.482	0.277	-0.038	0.003	-0.122	0.383	0.466	0.401
88.7	0.006	0.077	0.267	0.481	0.278	-0.040	0.015	-0.121	0.399	0.471	0.397
90.1	0.011	0.083	0.275	0.482	0.276	-0.042	0.024	-0.119	0.410	0.480	0.407
91.5	0.020	0.082	0.279	0.486	0.279	-0.041	0.031	-0.122	0.422	0.491	0.416
92.9	0.018	0.084	0.280	0.490	0.282	-0.042	0.039	-0.120	0.436	0.500	0.421
94.3	0.017	0.088	0.286	0.493	0.279	-0.041	0.046	-0.116	0.455	0.508	0.429
95.8	0.018	0.092	0.298	0.500	0.282	-0.041	0.056	-0.115	0.473	0.524	0.434
97.2	0.027	0.102	0.304	0.508	0.291	-0.040	0.068	-0.112	0.490	0.539	0.441
98.6	0.036	0.110	0.309	0.513	0.294	-0.038	0.075	-0.107	0.511	0.559	0.450
100.0	0.040	0.116	0.317	0.521	0.295	-0.038	0.076	-0.104	0.533	0.578	0.465
101.4	0.044	0.127	0.326	0.529	0.299	-0.041	0.080	-0.102	0.553	0.599	0.480
102.8	0.055	0.137	0.329	0.534	0.299	-0.040	0.087	-0.100	0.574	0.622	0.489
104.2	0.068	0.141	0.340	0.541	0.299	-0.042	0.093	-0.094	0.599	0.646	0.493
105.6	0.077	0.160	0.355	0.552	0.300	-0.043	0.097	-0.086	0.617	0.671	0.507
107.0	0.095	0.175	0.364	0.560	0.303	-0.044	0.100	-0.081	0.639	0.695	0.525
108.4	0.102	0.184	0.370	0.565	0.305	-0.046	0.104	-0.074	0.662	0.725	0.536
109.8	0.119	0.201	0.377	0.574	0.305	-0.045	0.109	-0.069	0.682	0.749	0.541
111.2	0.134	0.207	0.374	0.579	0.307	-0.048	0.112	-0.061	0.705	0.776	0.548
112.6	0.147	0.225	0.386	0.590	0.309	-0.048	0.114	-0.054	0.729	0.802	0.565
114.0	0.163	0.244	0.400	0.606	0.309	-0.047	0.117	-0.044	0.748	0.826	0.578
115.4	0.172	0.255	0.397	0.607	0.312	-0.047	0.116	-0.033	0.766	0.852	0.590
116.8	0.185	0.267	0.412	0.617	0.314	-0.044	0.111	-0.025	0.781	0.862	0.595
118.3	0.193	0.280	0.422	0.632	0.315	-0.044	0.108	-0.016	0.787	0.864	0.593
119.7	0.206	0.291	0.428	0.642	0.321	-0.040	0.100	-0.009	0.778	0.872	0.588
121.1	0.220	0.306	0.442	0.648	0.325	-0.038	0.086	-0.005	0.762	0.870	0.585
122.5	0.224	0.310	0.446	0.655	0.325	-0.039	0.075	-0.001	0.750	0.878	0.586

Table 13. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.221	0.301	0.450	0.664	0.322	-0.040	0.064	0.000	0.717	0.860	0.569
125.3	0.231	0.315	0.452	0.667	0.325	-0.041	0.056	-0.002	0.688	0.800	0.543
126.7	0.229	0.315	0.458	0.670	0.324	-0.041	0.054	0.000	0.674	0.754	0.528
128.1	0.225	0.308	0.456	0.679	0.321	-0.041	0.045	0.005	0.647	0.731	0.501
129.5	0.227	0.314	0.445	0.677	0.318	-0.041	0.034	0.010	0.618	0.700	0.474
130.9	0.216	0.302	0.446	0.676	0.318	-0.041	0.028	0.010	0.605	0.674	0.470
132.3	0.202	0.294	0.439	0.679	0.318	-0.043	0.027	0.006	0.598	0.672	0.446
133.7	0.195	0.293	0.427	0.672	0.314	-0.045	0.025	0.012	0.579	0.654	0.425
135.1	0.187	0.279	0.423	0.669	0.309	-0.046	0.022	0.019	0.575	0.651	0.420
136.5	0.174	0.261	0.415	0.669	0.305	-0.046	0.019	0.020	0.571	0.640	0.416
137.9	0.158	0.248	0.406	0.664	0.303	-0.043	0.015	0.027	0.549	0.614	0.408
139.3	0.146	0.241	0.396	0.655	0.305	-0.044	0.016	0.033	0.532	0.608	0.400
140.8	0.133	0.230	0.388	0.649	0.300	-0.047	0.009	0.037	0.520	0.596	0.390
142.2	0.113	0.215	0.378	0.646	0.295	-0.044	0.003	0.041	0.506	0.576	0.387
143.6	0.103	0.202	0.372	0.644	0.292	-0.046	-0.002	0.040	0.495	0.565	0.381
145.0	0.101	0.194	0.367	0.634	0.292	-0.045	-0.002	0.038	0.483	0.555	0.377
146.4	0.083	0.176	0.358	0.628	0.293	-0.044	-0.004	0.040	0.467	0.539	0.375
147.8	0.067	0.165	0.350	0.627	0.289	-0.046	-0.012	0.040	0.454	0.532	0.372
149.2	0.066	0.159	0.344	0.619	0.285	-0.046	-0.020	0.032	0.442	0.525	0.367
150.6	0.055	0.149	0.336	0.606	0.284	-0.044	-0.026	0.020	0.429	0.520	0.370
152.0	0.045	0.135	0.326	0.603	0.285	-0.046	-0.027	0.008	0.417	0.512	0.380
153.4	0.046	0.131	0.321	0.599	0.281	-0.046	-0.031	-0.001	0.406	0.499	0.388
154.8	0.040	0.122	0.326	0.589	0.282	-0.041	-0.030	-0.009	0.397	0.491	0.385
156.2	0.028	0.114	0.319	0.586	0.282	-0.043	-0.032	-0.016	0.391	0.484	0.384
157.6	0.026	0.114	0.315	0.580	0.278	-0.044	-0.038	-0.029	0.380	0.479	0.382
159.0	0.022	0.109	0.318	0.578	0.279	-0.044	-0.035	-0.040	0.377	0.473	0.370
160.4	0.016	0.107	0.312	0.571	0.279	-0.041	-0.031	-0.043	0.374	0.470	0.363
161.8	0.014	0.103	0.310	0.566	0.279	-0.037	-0.025	-0.051	0.371	0.470	0.359
163.3	0.008	0.102	0.306	0.557	0.280	-0.038	-0.020	-0.057	0.372	0.467	0.358
164.7	0.008	0.101	0.307	0.558	0.279	-0.038	-0.017	-0.057	0.376	0.467	0.359
166.1	0.004	0.096	0.313	0.557	0.277	-0.037	-0.011	-0.057	0.376	0.469	0.359
167.5	0.004	0.102	0.325	0.553	0.277	-0.037	-0.004	-0.061	0.374	0.477	0.360
168.9	0.004	0.102	0.333	0.553	0.278	-0.040	0.002	-0.066	0.378	0.479	0.364
170.3	0.001	0.098	0.328	0.545	0.278	-0.040	0.008	-0.069	0.380	0.479	0.370
171.7	0.001	0.099	0.330	0.538	0.275	-0.043	0.013	-0.073	0.380	0.484	0.372
173.1	0.009	0.108	0.341	0.541	0.273	-0.044	0.018	-0.076	0.382	0.486	0.374
174.5	0.013	0.109	0.339	0.534	0.269	-0.048	0.026	-0.080	0.384	0.491	0.374
175.9	0.010	0.107	0.335	0.526	0.268	-0.050	0.034	-0.083	0.393	0.495	0.370
177.3	0.014	0.110	0.339	0.522	0.267	-0.048	0.043	-0.086	0.403	0.501	0.361
178.7	0.019	0.115	0.339	0.519	0.266	-0.051	0.053	-0.088	0.411	0.509	0.366
180.1	0.018	0.116	0.341	0.516	0.264	-0.051	0.064	-0.087	0.426	0.517	0.370
181.5	0.022	0.117	0.339	0.509	0.265	-0.053	0.070	-0.089	0.436	0.529	0.369
182.9	0.021	0.117	0.345	0.514	0.266	-0.055	0.079	-0.089	0.448	0.538	0.375
184.3	0.025	0.127	0.352	0.513	0.266	-0.052	0.090	-0.087	0.460	0.546	0.383

Table 13. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.031	0.129	0.351	0.511	0.267	-0.051	0.101	-0.084	0.477	0.558	0.393
187.2	0.033	0.135	0.354	0.514	0.270	-0.050	0.112	-0.082	0.493	0.576	0.399
188.6	0.041	0.145	0.358	0.513	0.272	-0.052	0.116	-0.079	0.509	0.590	0.410
190.0	0.048	0.154	0.366	0.521	0.273	-0.052	0.126	-0.075	0.532	0.605	0.418
191.4	0.057	0.163	0.370	0.519	0.275	-0.053	0.134	-0.075	0.550	0.629	0.428
192.8	0.063	0.168	0.370	0.521	0.274	-0.052	0.140	-0.074	0.571	0.651	0.441
194.2	0.069	0.180	0.374	0.526	0.275	-0.052	0.144	-0.070	0.596	0.673	0.451
195.6	0.081	0.191	0.376	0.529	0.276	-0.055	0.147	-0.066	0.623	0.700	0.461
197.0	0.091	0.202	0.382	0.533	0.276	-0.054	0.150	-0.063	0.650	0.731	0.470
198.4	0.104	0.214	0.385	0.537	0.277	-0.056	0.150	-0.060	0.675	0.764	0.484
199.8	0.110	0.224	0.389	0.543	0.276	-0.055	0.151	-0.053	0.700	0.797	0.499
201.2	0.127	0.239	0.394	0.543	0.279	-0.054	0.152	-0.044	0.726	0.835	0.517
202.6	0.139	0.248	0.396	0.548	0.279	-0.051	0.151	-0.038	0.753	0.866	0.536
204.0	0.142	0.258	0.401	0.554	0.281	-0.047	0.152	-0.033	0.774	0.892	0.551
205.4	0.160	0.274	0.405	0.560	0.284	-0.045	0.154	-0.028	0.793	0.921	0.561
206.8	0.166	0.279	0.406	0.566	0.284	-0.045	0.152	-0.021	0.805	0.950	0.577
208.3	0.171	0.291	0.408	0.570	0.287	-0.043	0.148	-0.013	0.817	0.962	0.578
209.7	0.186	0.305	0.410	0.574	0.288	-0.042	0.139	-0.008	0.827	0.961	0.565
211.1	0.185	0.304	0.416	0.584	0.288	-0.042	0.127	0.000	0.821	0.949	0.577
212.5	0.187	0.313	0.410	0.583	0.286	-0.042	0.122	0.006	0.810	0.943	0.580
213.9	0.188	0.315	0.410	0.583	0.286	-0.041	0.112	0.012	0.781	0.917	0.566
215.3	0.198	0.316	0.403	0.587	0.287	-0.039	0.097	0.019	0.746	0.880	0.546
216.7	0.200	0.321	0.398	0.583	0.285	-0.037	0.095	0.018	0.707	0.852	0.526
218.1	0.184	0.303	0.402	0.589	0.286	-0.036	0.092	0.018	0.673	0.819	0.515
219.5	0.187	0.307	0.387	0.591	0.286	-0.035	0.082	0.022	0.661	0.783	0.506
220.9	0.187	0.306	0.382	0.587	0.285	-0.033	0.077	0.024	0.648	0.755	0.486
222.3	0.179	0.294	0.377	0.587	0.284	-0.034	0.068	0.028	0.635	0.731	0.458
223.7	0.170	0.289	0.367	0.586	0.284	-0.035	0.063	0.030	0.616	0.709	0.442
225.1	0.168	0.281	0.361	0.588	0.281	-0.035	0.065	0.033	0.602	0.683	0.436
226.5	0.155	0.268	0.352	0.585	0.281	-0.030	0.065	0.042	0.593	0.659	0.420
227.9	0.138	0.250	0.344	0.583	0.279	-0.030	0.064	0.054	0.566	0.647	0.411
229.3	0.132	0.243	0.330	0.582	0.276	-0.032	0.061	0.064	0.547	0.632	0.404
230.8	0.123	0.238	0.315	0.572	0.273	-0.029	0.053	0.069	0.539	0.615	0.390
232.2	0.115	0.226	0.306	0.570	0.277	-0.030	0.050	0.069	0.524	0.604	0.381
233.6	0.108	0.215	0.293	0.571	0.271	-0.030	0.043	0.069	0.508	0.593	0.377
235.0	0.091	0.193	0.282	0.567	0.270	-0.028	0.034	0.070	0.490	0.577	0.377
236.4	0.092	0.186	0.267	0.564	0.272	-0.028	0.028	0.062	0.470	0.554	0.378
237.8	0.083	0.178	0.255	0.558	0.269	-0.029	0.019	0.055	0.455	0.543	0.370
239.2	0.072	0.166	0.248	0.558	0.271	-0.027	0.015	0.051	0.438	0.534	0.356
240.6	0.064	0.149	0.235	0.555	0.270	-0.026	0.007	0.043	0.424	0.522	0.350
242.0	0.050	0.136	0.219	0.551	0.270	-0.026	0.000	0.033	0.412	0.513	0.350
243.4	0.051	0.123	0.209	0.549	0.272	-0.025	-0.003	0.021	0.400	0.503	0.347
244.8	0.042	0.113	0.203	0.546	0.272	-0.024	-0.009	0.007	0.385	0.497	0.341
246.2	0.037	0.105	0.196	0.546	0.272	-0.023	-0.012	0.000	0.373	0.495	0.339

Table 13. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.035	0.097	0.189	0.544	0.268	-0.023	-0.016	-0.008	0.365	0.491	0.340
249.0	0.028	0.092	0.178	0.545	0.267	-0.022	-0.013	-0.018	0.357	0.488	0.336
250.4	0.028	0.086	0.174	0.542	0.269	-0.023	-0.009	-0.027	0.352	0.485	0.337
251.8	0.025	0.078	0.166	0.537	0.272	-0.021	-0.008	-0.036	0.349	0.482	0.337
253.3	0.020	0.072	0.159	0.538	0.272	-0.023	-0.004	-0.042	0.347	0.478	0.332
254.7	0.020	0.066	0.156	0.537	0.270	-0.025	-0.006	-0.050	0.351	0.481	0.325
256.1	0.015	0.063	0.152	0.535	0.269	-0.022	-0.001	-0.056	0.357	0.480	0.317
257.5	0.017	0.059	0.146	0.536	0.271	-0.023	0.004	-0.058	0.352	0.488	0.316
258.9	0.014	0.051	0.141	0.535	0.271	-0.024	0.004	-0.061	0.344	0.493	0.326
260.3	0.012	0.048	0.137	0.534	0.269	-0.027	0.008	-0.067	0.345	0.484	0.331
261.7	0.015	0.055	0.135	0.532	0.268	-0.029	0.017	-0.075	0.341	0.483	0.344
263.1	0.018	0.055	0.133	0.535	0.268	-0.028	0.019	-0.083	0.337	0.484	0.350
264.5	0.018	0.052	0.127	0.535	0.265	-0.032	0.026	-0.089	0.344	0.484	0.341
265.9	0.018	0.049	0.125	0.534	0.267	-0.033	0.037	-0.090	0.348	0.483	0.348
267.3	0.016	0.049	0.122	0.532	0.270	-0.031	0.044	-0.089	0.353	0.487	0.346
268.7	0.018	0.048	0.119	0.530	0.268	-0.030	0.053	-0.091	0.366	0.498	0.346
270.1	0.024	0.049	0.122	0.535	0.269	-0.031	0.066	-0.094	0.378	0.505	0.355
271.5	0.026	0.056	0.126	0.538	0.268	-0.031	0.078	-0.092	0.393	0.511	0.364
272.9	0.034	0.059	0.129	0.542	0.276	-0.030	0.086	-0.089	0.410	0.526	0.373
274.3	0.039	0.067	0.127	0.545	0.275	-0.028	0.096	-0.087	0.423	0.540	0.379
275.8	0.048	0.074	0.131	0.548	0.278	-0.027	0.109	-0.086	0.442	0.556	0.393
277.2	0.054	0.072	0.134	0.552	0.283	-0.024	0.118	-0.084	0.461	0.571	0.397
278.6	0.055	0.083	0.145	0.559	0.288	-0.023	0.126	-0.078	0.482	0.589	0.402
280.0	0.074	0.097	0.149	0.561	0.290	-0.022	0.134	-0.073	0.502	0.611	0.426
281.4	0.081	0.099	0.156	0.568	0.292	-0.021	0.140	-0.071	0.524	0.630	0.448
282.8	0.087	0.111	0.168	0.574	0.295	-0.022	0.146	-0.070	0.553	0.654	0.455
284.2	0.104	0.125	0.181	0.584	0.295	-0.021	0.149	-0.069	0.577	0.678	0.468
285.6	0.116	0.139	0.186	0.581	0.301	-0.023	0.149	-0.068	0.598	0.701	0.486
287.0	0.131	0.146	0.194	0.584	0.299	-0.024	0.153	-0.061	0.627	0.727	0.497
288.4	0.133	0.148	0.205	0.589	0.297	-0.018	0.156	-0.056	0.649	0.752	0.513
289.8	0.154	0.174	0.223	0.595	0.297	-0.022	0.158	-0.053	0.669	0.780	0.530
291.2	0.173	0.179	0.231	0.600	0.301	-0.022	0.161	-0.047	0.692	0.807	0.543
292.6	0.183	0.190	0.246	0.600	0.305	-0.020	0.164	-0.040	0.718	0.829	0.551
294.0	0.195	0.200	0.261	0.605	0.306	-0.018	0.158	-0.034	0.737	0.849	0.560
295.4	0.200	0.207	0.278	0.605	0.307	-0.015	0.149	-0.024	0.747	0.865	0.567
296.8	0.221	0.229	0.304	0.615	0.307	-0.014	0.144	-0.020	0.762	0.881	0.575
298.3	0.232	0.229	0.319	0.621	0.312	-0.012	0.135	-0.015	0.770	0.895	0.579
299.7	0.237	0.243	0.332	0.620	0.313	-0.009	0.121	-0.011	0.760	0.895	0.573
301.1	0.244	0.247	0.345	0.622	0.315	-0.008	0.110	-0.011	0.743	0.895	0.573
302.5	0.256	0.252	0.353	0.622	0.316	-0.008	0.102	-0.011	0.736	0.879	0.571
303.9	0.257	0.262	0.369	0.622	0.314	-0.007	0.094	-0.006	0.713	0.849	0.571
305.3	0.249	0.252	0.370	0.626	0.315	-0.005	0.084	0.001	0.684	0.820	0.555
306.7	0.258	0.258	0.380	0.622	0.311	-0.005	0.072	0.007	0.658	0.771	0.528
308.1	0.257	0.254	0.391	0.622	0.311	-0.006	0.066	0.010	0.625	0.733	0.513

Table 13. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.243	0.247	0.393	0.619	0.311	-0.005	0.059	0.010	0.595	0.717	0.496
310.9	0.241	0.241	0.400	0.617	0.310	-0.002	0.054	0.013	0.571	0.703	0.497
312.3	0.219	0.237	0.401	0.608	0.308	0.000	0.048	0.021	0.562	0.682	0.490
313.7	0.220	0.240	0.413	0.608	0.307	0.000	0.036	0.024	0.562	0.670	0.460
315.1	0.217	0.227	0.415	0.603	0.307	0.001	0.038	0.027	0.555	0.646	0.434
316.5	0.203	0.218	0.420	0.597	0.307	0.000	0.037	0.033	0.540	0.627	0.425
317.9	0.188	0.198	0.424	0.594	0.305	0.004	0.031	0.041	0.525	0.627	0.430
319.3	0.164	0.187	0.421	0.583	0.300	0.005	0.029	0.047	0.515	0.617	0.432
320.8	0.162	0.189	0.416	0.576	0.300	0.008	0.026	0.052	0.507	0.611	0.429
322.2	0.153	0.176	0.414	0.565	0.299	0.009	0.021	0.056	0.501	0.602	0.427
323.6	0.140	0.160	0.408	0.559	0.300	0.008	0.019	0.058	0.486	0.582	0.423
325.0	0.134	0.149	0.398	0.552	0.298	0.008	0.012	0.057	0.470	0.563	0.415
326.4	0.126	0.141	0.395	0.541	0.298	0.009	0.004	0.052	0.452	0.543	0.399
327.8	0.113	0.130	0.387	0.535	0.293	0.009	-0.005	0.044	0.432	0.523	0.383
329.2	0.099	0.119	0.377	0.529	0.290	0.008	-0.013	0.036	0.418	0.514	0.381
330.6	0.095	0.116	0.366	0.520	0.292	0.010	-0.018	0.024	0.411	0.507	0.380
332.0	0.086	0.108	0.363	0.511	0.290	0.011	-0.023	0.011	0.398	0.501	0.373
333.4	0.079	0.101	0.348	0.505	0.288	0.010	-0.022	0.002	0.383	0.492	0.369
334.8	0.072	0.099	0.337	0.494	0.284	0.010	-0.023	-0.005	0.369	0.479	0.360
336.2	0.056	0.085	0.327	0.490	0.285	0.011	-0.027	-0.013	0.363	0.469	0.354
337.6	0.053	0.084	0.318	0.485	0.283	0.012	-0.028	-0.023	0.358	0.457	0.350
339.0	0.045	0.082	0.315	0.478	0.283	0.015	-0.027	-0.036	0.353	0.449	0.341
340.4	0.037	0.082	0.307	0.474	0.284	0.017	-0.026	-0.048	0.349	0.446	0.345
341.8	0.034	0.079	0.304	0.470	0.282	0.014	-0.025	-0.056	0.348	0.445	0.347
343.3	0.024	0.077	0.298	0.469	0.282	0.013	-0.023	-0.062	0.348	0.443	0.346
344.7	0.022	0.077	0.294	0.465	0.281	0.008	-0.020	-0.068	0.351	0.446	0.350
346.1	0.020	0.073	0.288	0.463	0.281	0.009	-0.019	-0.073	0.349	0.449	0.343
347.5	0.020	0.077	0.280	0.457	0.280	0.005	-0.019	-0.080	0.344	0.458	0.340
348.9	0.019	0.076	0.277	0.456	0.279	0.003	-0.016	-0.084	0.342	0.458	0.347
350.3	0.015	0.074	0.272	0.455	0.277	0.000	-0.011	-0.086	0.341	0.457	0.355
351.7	0.017	0.078	0.271	0.451	0.275	-0.002	-0.004	-0.088	0.340	0.457	0.363
353.1	0.021	0.084	0.268	0.453	0.274	-0.003	0.001	-0.093	0.340	0.454	0.362
354.5	0.024	0.085	0.265	0.452	0.272	-0.006	0.006	-0.100	0.344	0.459	0.373
355.9	0.022	0.091	0.263	0.450	0.270	-0.007	0.013	-0.101	0.353	0.463	0.375
357.3	0.023	0.092	0.256	0.448	0.271	-0.007	0.018	-0.102	0.364	0.467	0.378
358.7	0.029	0.098	0.259	0.448	0.270	-0.007	0.026	-0.106	0.375	0.479	0.387

Table 14. Modified unsteady pressure coefficients around the body at x/l = 0.90. $C_T/\sigma = 0.0649$, $\mu = 0.051$, $\alpha_s = 0.0°$, $\theta = 11.9°$, $A_1 = -1.3°$, $B_1 = 1.3°$.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.062	0.058	0.140	0.105	0.119	0.035	-0.050	-0.104	-0.063	-0.410
1.5	0.063	0.059	0.147	0.109	0.126	0.045	-0.042	-0.102	-0.062	-0.410
2.9	0.066	0.065	0.149	0.109	0.138	0.055	-0.034	-0.104	-0.063	-0.410
4.3	0.066	0.064	0.150	0.110	0.146	0.064	-0.030	-0.102	-0.065	-0.410
5.8	0.067	0.059	0.151	0.110	0.152	0.076	-0.025	-0.098	-0.056	-0.410
7.2	0.069	0.057	0.152	0.108	0.157	0.086	-0.016	-0.097	-0.056	-0.410
8.6	0.070	0.056	0.150	0.107	0.158	0.090	-0.006	-0.094	-0.055	-0.411
10.0	0.073	0.056	0.142	0.105	0.158	0.098	-0.002	-0.089	-0.050	-0.410
11.4	0.073	0.055	0.138	0.100	0.161	0.109	0.008	-0.090	-0.052	-0.410
12.8	0.072	0.050	0.133	0.093	0.158	0.113	0.016	-0.089	-0.049	-0.411
14.2	0.075	0.044	0.132	0.087	0.155	0.116	0.018	-0.083	-0.047	-0.411
15.6	0.076	0.040	0.130	0.082	0.149	0.119	0.026	-0.081	-0.044	-0.412
17.0	0.075	0.037	0.122	0.076	0.142	0.120	0.032	-0.077	-0.043	-0.412
18.4	0.073	0.034	0.114	0.071	0.134	0.120	0.035	-0.072	-0.040	-0.412
19.8	0.073	0.032	0.110	0.064	0.125	0.117	0.042	-0.067	-0.037	-0.413
21.2	0.074	0.025	0.104	0.057	0.119	0.117	0.048	-0.062	-0.037	-0.414
22.6	0.075	0.019	0.098	0.049	0.110	0.114	0.052	-0.061	-0.036	-0.415
24.0	0.074	0.015	0.089	0.043	0.104	0.112	0.056	-0.059	-0.033	-0.415
25.4	0.071	0.011	0.086	0.038	0.098	0.112	0.061	-0.052	-0.028	-0.416
26.8	0.070	0.005	0.083	0.035	0.093	0.109	0.069	-0.042	-0.023	-0.417
28.3	0.071	0.007	0.083	0.032	0.083	0.101	0.071	-0.041	-0.021	-0.417
29.7	0.071	0.005	0.075	0.025	0.071	0.093	0.068	-0.039	-0.016	-0.418
31.1	0.068	0.001	0.065	0.017	0.062	0.086	0.067	-0.032	-0.013	-0.418
32.5	0.066	0.000	0.065	0.015	0.049	0.077	0.064	-0.030	-0.011	-0.419
33.9	0.064	-0.001	0.061	0.012	0.038	0.068	0.061	-0.027	-0.009	-0.419
35.3	0.065	-0.004	0.053	0.007	0.027	0.057	0.055	-0.022	-0.006	-0.418
36.7	0.067	-0.003	0.045	-0.003	0.017	0.046	0.047	-0.020	-0.003	-0.419
38.1	0.068	-0.008	0.040	-0.009	0.015	0.042	0.047	-0.025	-0.006	-0.419
39.5	0.069	-0.012	0.037	-0.015	0.008	0.033	0.041	-0.028	-0.011	-0.418
40.9	0.069	-0.013	0.037	-0.018	0.000	0.026	0.038	-0.027	-0.010	-0.417
42.3	0.069	-0.014	0.033	-0.019	-0.002	0.021	0.033	-0.022	-0.006	-0.417
43.7	0.069	-0.007	0.034	-0.017	-0.003	0.021	0.032	-0.016	-0.008	-0.416
45.1	0.069	-0.007	0.040	-0.012	-0.001	0.024	0.037	-0.013	-0.007	-0.417
46.5	0.070	-0.006	0.034	-0.013	-0.001	0.020	0.036	0.000	0.007	-0.416
47.9	0.076	-0.002	0.036	-0.012	-0.002	0.016	0.037	0.003	0.009	-0.416
49.3	0.075	-0.003	0.039	-0.010	0.002	0.012	0.031	0.008	0.014	-0.416
50.8	0.076	-0.001	0.038	-0.011	0.003	0.008	0.023	0.012	0.017	-0.415
52.2	0.079	0.006	0.047	-0.005	0.002	0.004	0.022	0.015	0.017	-0.415
53.6	0.077	0.008	0.048	-0.003	-0.001	-0.002	0.013	0.015	0.021	-0.415
55.0	0.081	0.014	0.051	-0.001	-0.003	-0.008	0.004	0.005	0.017	-0.415
56.4	0.082	0.014	0.052	0.003	-0.004	-0.017	-0.006	0.007	0.012	-0.414
57.8	0.083	0.013	0.050	0.003	-0.004	-0.023	-0.013	0.005	0.014	-0.413
59.2	0.086	0.014	0.056	0.008	-0.003	-0.031	-0.024	-0.003	0.014	-0.412
60.6	0.085	0.015	0.059	0.010	-0.008	-0.036	-0.036	-0.013	0.005	-0.411

Table 14. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.087	0.017	0.056	0.012	-0.012	-0.040	-0.043	-0.021	-0.001	-0.411
63.4	0.087	0.015	0.056	0.015	-0.014	-0.047	-0.054	-0.033	-0.013	-0.411
64.8	0.086	0.021	0.061	0.019	-0.010	-0.050	-0.064	-0.047	-0.021	-0.411
66.2	0.087	0.021	0.065	0.023	-0.007	-0.055	-0.067	-0.058	-0.026	-0.411
67.6	0.088	0.024	0.071	0.028	-0.009	-0.056	-0.076	-0.067	-0.036	-0.411
69.0	0.090	0.033	0.081	0.037	-0.005	-0.054	-0.082	-0.073	-0.046	-0.412
70.4	0.091	0.048	0.094	0.050	0.004	-0.052	-0.083	-0.080	-0.053	-0.413
71.8	0.095	0.055	0.099	0.061	0.015	-0.049	-0.083	-0.087	-0.058	-0.414
73.3	0.099	0.053	0.095	0.061	0.019	-0.043	-0.084	-0.095	-0.063	-0.415
74.7	0.105	0.054	0.096	0.063	0.024	-0.040	-0.084	-0.104	-0.066	-0.415
76.1	0.106	0.059	0.102	0.069	0.029	-0.039	-0.084	-0.109	-0.072	-0.416
77.5	0.104	0.062	0.112	0.076	0.035	-0.037	-0.085	-0.112	-0.078	-0.417
78.9	0.104	0.059	0.115	0.078	0.043	-0.033	-0.086	-0.116	-0.081	-0.417
80.3	0.106	0.058	0.119	0.082	0.049	-0.031	-0.085	-0.117	-0.088	-0.417
81.7	0.106	0.068	0.126	0.089	0.059	-0.024	-0.082	-0.120	-0.090	-0.416
83.1	0.104	0.071	0.130	0.094	0.069	-0.014	-0.082	-0.124	-0.091	-0.416
84.5	0.105	0.067	0.131	0.098	0.077	-0.011	-0.083	-0.128	-0.095	-0.417
85.9	0.104	0.073	0.136	0.101	0.087	-0.006	-0.080	-0.126	-0.097	-0.417
87.3	0.102	0.074	0.137	0.106	0.098	0.003	-0.074	-0.121	-0.092	-0.417
88.7	0.103	0.074	0.138	0.108	0.109	0.015	-0.068	-0.121	-0.092	-0.417
90.1	0.102	0.076	0.143	0.107	0.118	0.024	-0.061	-0.127	-0.094	-0.417
91.5	0.100	0.074	0.151	0.109	0.125	0.031	-0.059	-0.129	-0.094	-0.417
92.9	0.102	0.076	0.150	0.114	0.130	0.039	-0.054	-0.123	-0.092	-0.417
94.3	0.104	0.075	0.147	0.116	0.137	0.046	-0.049	-0.124	-0.095	-0.417
95.8	0.103	0.073	0.144	0.114	0.142	0.056	-0.041	-0.122	-0.094	-0.418
97.2	0.102	0.069	0.145	0.112	0.146	0.068	-0.030	-0.116	-0.087	-0.418
98.6	0.102	0.068	0.145	0.111	0.147	0.075	-0.029	-0.112	-0.084	-0.418
100.0	0.101	0.065	0.141	0.106	0.146	0.076	-0.022	-0.110	-0.079	-0.419
101.4	0.102	0.062	0.134	0.101	0.147	0.080	-0.013	-0.110	-0.075	-0.420
102.8	0.100	0.056	0.126	0.097	0.146	0.087	-0.006	-0.106	-0.072	-0.420
104.2	0.097	0.049	0.120	0.092	0.145	0.093	0.001	-0.102	-0.072	-0.421
105.6	0.099	0.048	0.120	0.089	0.145	0.097	0.008	-0.095	-0.065	-0.421
107.0	0.094	0.044	0.119	0.084	0.139	0.100	0.015	-0.094	-0.061	-0.421
108.4	0.091	0.037	0.114	0.076	0.139	0.104	0.021	-0.089	-0.057	-0.421
109.8	0.090	0.036	0.108	0.072	0.139	0.109	0.033	-0.080	-0.047	-0.422
111.2	0.088	0.029	0.105	0.069	0.132	0.112	0.042	-0.076	-0.042	-0.423
112.6	0.086	0.027	0.099	0.064	0.127	0.114	0.048	-0.070	-0.037	-0.423
114.0	0.083	0.026	0.093	0.059	0.124	0.117	0.058	-0.061	-0.029	-0.424
115.4	0.081	0.017	0.087	0.055	0.118	0.116	0.064	-0.050	-0.024	-0.424
116.8	0.078	0.016	0.087	0.050	0.111	0.111	0.069	-0.040	-0.018	-0.424
118.3	0.077	0.016	0.087	0.048	0.111	0.108	0.071	-0.035	-0.008	-0.424
119.7	0.074	0.013	0.081	0.045	0.102	0.100	0.069	-0.028	-0.003	-0.422
121.1	0.076	0.013	0.080	0.043	0.088	0.086	0.067	-0.019	0.007	-0.422
122.5	0.072	0.012	0.078	0.038	0.079	0.075	0.060	-0.013	0.013	-0.421

Table 14. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.071	0.005	0.072	0.028	0.070	0.064	0.055	-0.012	0.011	-0.420
125.3	0.074	0.001	0.071	0.021	0.063	0.056	0.055	-0.015	0.010	-0.420
126.7	0.072	-0.003	0.067	0.017	0.057	0.054	0.052	-0.014	0.010	-0.419
128.1	0.071	-0.004	0.061	0.014	0.051	0.045	0.048	-0.008	0.012	-0.418
129.5	0.070	-0.003	0.061	0.014	0.042	0.034	0.039	0.001	0.019	-0.418
130.9	0.067	-0.004	0.058	0.009	0.030	0.028	0.033	0.000	0.021	-0.418
132.3	0.065	-0.006	0.056	0.004	0.029	0.027	0.034	-0.005	0.023	-0.418
133.7	0.066	-0.008	0.055	0.002	0.027	0.025	0.032	0.007	0.026	-0.418
135.1	0.066	-0.009	0.052	0.000	0.022	0.022	0.034	0.011	0.030	-0.418
136.5	0.062	-0.008	0.051	-0.001	0.015	0.019	0.033	0.016	0.036	-0.416
137.9	0.063	-0.006	0.057	0.002	0.015	0.015	0.031	0.022	0.041	-0.415
139.3	0.063	-0.008	0.052	0.003	0.018	0.016	0.030	0.029	0.048	-0.415
140.8	0.061	-0.005	0.054	0.004	0.013	0.009	0.026	0.040	0.058	-0.415
142.2	0.059	0.003	0.055	0.007	0.011	0.003	0.022	0.045	0.063	-0.415
143.6	0.056	0.007	0.054	0.009	0.010	-0.002	0.017	0.040	0.065	-0.415
145.0	0.057	0.006	0.053	0.011	0.009	-0.002	0.013	0.039	0.067	-0.415
146.4	0.059	0.009	0.048	0.011	0.010	-0.004	0.007	0.047	0.070	-0.415
147.8	0.061	0.011	0.051	0.013	0.012	-0.012	-0.002	0.046	0.077	-0.415
149.2	0.059	0.015	0.055	0.016	0.010	-0.020	-0.013	0.039	0.075	-0.414
150.6	0.060	0.017	0.056	0.017	0.006	-0.026	-0.025	0.035	0.072	-0.414
152.0	0.057	0.020	0.054	0.021	0.008	-0.027	-0.031	0.021	0.062	-0.414
153.4	0.056	0.021	0.059	0.027	0.010	-0.031	-0.037	0.009	0.053	-0.413
154.8	0.053	0.027	0.065	0.032	0.014	-0.030	-0.043	0.008	0.052	-0.412
156.2	0.053	0.032	0.070	0.038	0.016	-0.032	-0.052	0.003	0.049	-0.411
157.6	0.055	0.040	0.079	0.044	0.017	-0.038	-0.059	-0.012	0.037	-0.411
159.0	0.057	0.052	0.090	0.057	0.024	-0.035	-0.061	-0.024	0.026	-0.411
160.4	0.058	0.060	0.098	0.068	0.034	-0.031	-0.065	-0.028	0.021	-0.411
161.8	0.061	0.061	0.102	0.074	0.043	-0.025	-0.064	-0.034	0.016	-0.411
163.3	0.066	0.062	0.105	0.080	0.046	-0.020	-0.064	-0.039	0.010	-0.411
164.7	0.067	0.070	0.115	0.086	0.054	-0.017	-0.064	-0.040	0.009	-0.411
166.1	0.065	0.072	0.121	0.090	0.065	-0.011	-0.060	-0.041	0.009	-0.411
167.5	0.062	0.075	0.123	0.096	0.073	-0.004	-0.059	-0.047	0.004	-0.410
168.9	0.064	0.079	0.133	0.107	0.083	0.002	-0.057	-0.052	0.003	-0.410
170.3	0.061	0.082	0.139	0.113	0.093	0.008	-0.055	-0.054	-0.001	-0.409
171.7	0.060	0.089	0.142	0.116	0.104	0.013	-0.055	-0.058	-0.006	-0.409
173.1	0.062	0.091	0.144	0.120	0.114	0.018	-0.051	-0.064	-0.012	-0.409
174.5	0.059	0.090	0.146	0.127	0.123	0.026	-0.049	-0.070	-0.018	-0.409
175.9	0.058	0.095	0.145	0.131	0.133	0.034	-0.049	-0.071	-0.021	-0.409
177.3	0.059	0.093	0.147	0.133	0.144	0.043	-0.042	-0.076	-0.024	-0.408
178.7	0.057	0.093	0.154	0.137	0.157	0.053	-0.037	-0.079	-0.030	-0.408
180.1	0.055	0.092	0.158	0.140	0.169	0.064	-0.031	-0.077	-0.032	-0.409
181.5	0.057	0.090	0.162	0.141	0.174	0.070	-0.029	-0.078	-0.034	-0.409
182.9	0.055	0.088	0.158	0.139	0.180	0.079	-0.019	-0.080	-0.033	-0.410
184.3	0.054	0.087	0.151	0.137	0.185	0.090	-0.013	-0.081	-0.035	-0.410

Table 14. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.054	0.082	0.154	0.136	0.191	0.101	-0.008	-0.078	-0.037	-0.411
187.2	0.051	0.077	0.151	0.133	0.196	0.112	0.004	-0.079	-0.036	-0.412
188.6	0.048	0.075	0.148	0.131	0.197	0.116	0.008	-0.075	-0.035	-0.413
190.0	0.047	0.070	0.147	0.128	0.198	0.126	0.016	-0.072	-0.032	-0.413
191.4	0.043	0.065	0.140	0.120	0.198	0.134	0.025	-0.071	-0.032	-0.413
192.8	0.042	0.059	0.134	0.114	0.196	0.140	0.033	-0.070	-0.034	-0.412
194.2	0.039	0.050	0.126	0.108	0.192	0.144	0.039	-0.071	-0.033	-0.412
195.6	0.036	0.046	0.124	0.104	0.186	0.147	0.044	-0.065	-0.032	-0.412
197.0	0.034	0.041	0.119	0.097	0.179	0.150	0.051	-0.065	-0.034	-0.412
198.4	0.030	0.033	0.111	0.090	0.173	0.150	0.056	-0.066	-0.035	-0.412
199.8	0.028	0.025	0.107	0.083	0.165	0.151	0.063	-0.058	-0.030	-0.412
201.2	0.026	0.022	0.105	0.078	0.157	0.152	0.070	-0.052	-0.024	-0.412
202.6	0.024	0.019	0.099	0.073	0.151	0.151	0.073	-0.046	-0.023	-0.411
204.0	0.020	0.015	0.094	0.066	0.146	0.152	0.081	-0.041	-0.021	-0.411
205.4	0.019	0.007	0.090	0.060	0.145	0.154	0.087	-0.037	-0.017	-0.411
206.8	0.016	0.004	0.087	0.057	0.142	0.152	0.091	-0.032	-0.014	-0.411
208.3	0.013	0.007	0.085	0.057	0.135	0.148	0.095	-0.025	-0.010	-0.411
209.7	0.011	0.007	0.085	0.053	0.124	0.139	0.095	-0.018	-0.005	-0.410
211.1	0.010	0.000	0.083	0.046	0.116	0.127	0.091	-0.010	-0.002	-0.410
212.5	0.009	-0.006	0.073	0.039	0.109	0.122	0.089	-0.004	0.005	-0.410
213.9	0.007	-0.006	0.070	0.037	0.098	0.112	0.088	0.001	0.014	-0.410
215.3	0.003	-0.012	0.064	0.031	0.086	0.097	0.079	0.008	0.021	-0.410
216.7	0.007	-0.019	0.056	0.020	0.080	0.095	0.077	0.008	0.023	-0.409
218.1	0.009	-0.025	0.054	0.017	0.078	0.092	0.077	0.005	0.018	-0.407
219.5	0.004	-0.022	0.056	0.018	0.074	0.082	0.072	0.011	0.024	-0.407
220.9	0.003	-0.025	0.051	0.016	0.068	0.077	0.070	0.013	0.031	-0.407
222.3	0.001	-0.034	0.042	0.011	0.059	0.068	0.068	0.017	0.031	-0.406
223.7	0.003	-0.030	0.041	0.012	0.053	0.063	0.064	0.019	0.033	-0.406
225.1	0.001	-0.029	0.037	0.010	0.052	0.065	0.063	0.021	0.038	-0.405
226.5	-0.003	-0.030	0.035	0.009	0.053	0.065	0.069	0.033	0.042	-0.405
227.9	-0.002	-0.029	0.033	0.011	0.050	0.064	0.072	0.043	0.051	-0.405
229.3	0.001	-0.026	0.038	0.014	0.051	0.061	0.070	0.054	0.064	-0.405
230.8	-0.001	-0.021	0.044	0.018	0.047	0.053	0.064	0.064	0.075	-0.404
232.2	-0.003	-0.020	0.046	0.017	0.044	0.050	0.060	0.055	0.072	-0.405
233.6	-0.001	-0.018	0.051	0.018	0.044	0.043	0.054	0.063	0.073	-0.404
235.0	0.003	-0.012	0.055	0.026	0.042	0.034	0.040	0.066	0.081	-0.403
236.4	0.002	-0.009	0.055	0.027	0.035	0.028	0.030	0.056	0.077	-0.402
237.8	0.006	-0.007	0.058	0.026	0.030	0.019	0.021	0.056	0.074	-0.402
239.2	0.009	-0.003	0.065	0.029	0.027	0.015	0.012	0.050	0.076	-0.401
240.6	0.013	-0.001	0.073	0.034	0.026	0.007	0.003	0.045	0.075	-0.400
242.0	0.014	0.000	0.072	0.033	0.026	0.000	-0.007	0.036	0.067	-0.399
243.4	0.017	0.002	0.077	0.034	0.030	-0.003	-0.017	0.024	0.056	-0.398
244.8	0.021	0.005	0.080	0.038	0.031	-0.009	-0.027	0.011	0.046	-0.398
246.2	0.020	0.006	0.082	0.044	0.028	-0.012	-0.035	0.007	0.039	-0.398

Table 14. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.021	0.014	0.093	0.053	0.030	-0.016	-0.041	0.000	0.033	-0.398
249.0	0.024	0.031	0.102	0.063	0.040	-0.013	-0.042	-0.014	0.023	-0.398
250.4	0.028	0.041	0.119	0.081	0.048	-0.009	-0.044	-0.019	0.015	-0.398
251.8	0.032	0.042	0.120	0.087	0.058	-0.008	-0.049	-0.028	0.009	-0.399
253.3	0.040	0.041	0.105	0.081	0.060	-0.004	-0.048	-0.036	0.001	-0.399
254.7	0.045	0.039	0.108	0.082	0.065	-0.006	-0.048	-0.043	-0.006	-0.400
256.1	0.040	0.043	0.118	0.090	0.072	-0.001	-0.049	-0.050	-0.010	-0.400
257.5	0.034	0.042	0.125	0.094	0.076	0.004	-0.048	-0.054	-0.017	-0.401
258.9	0.037	0.044	0.126	0.096	0.081	0.004	-0.047	-0.059	-0.020	-0.401
260.3	0.041	0.045	0.129	0.103	0.093	0.008	-0.049	-0.066	-0.023	-0.401
261.7	0.033	0.050	0.135	0.108	0.103	0.017	-0.051	-0.071	-0.033	-0.401
263.1	0.030	0.054	0.143	0.111	0.110	0.019	-0.049	-0.076	-0.039	-0.402
264.5	0.030	0.056	0.149	0.114	0.118	0.026	-0.045	-0.084	-0.045	-0.403
265.9	0.027	0.057	0.152	0.118	0.129	0.037	-0.041	-0.087	-0.051	-0.404
267.3	0.029	0.059	0.154	0.120	0.138	0.044	-0.033	-0.087	-0.054	-0.405
268.7	0.029	0.059	0.156	0.124	0.150	0.053	-0.029	-0.090	-0.055	-0.405
270.1	0.027	0.058	0.160	0.133	0.161	0.066	-0.022	-0.091	-0.055	-0.406
271.5	0.025	0.063	0.168	0.136	0.168	0.078	-0.012	-0.090	-0.055	-0.407
272.9	0.025	0.059	0.163	0.133	0.177	0.086	-0.006	-0.092	-0.055	-0.407
274.3	0.028	0.055	0.162	0.133	0.188	0.096	-0.002	-0.089	-0.056	-0.408
275.8	0.027	0.057	0.171	0.135	0.197	0.109	0.006	-0.090	-0.056	-0.408
277.2	0.025	0.056	0.174	0.135	0.202	0.118	0.015	-0.091	-0.057	-0.408
278.6	0.029	0.054	0.176	0.134	0.201	0.126	0.023	-0.081	-0.053	-0.409
280.0	0.029	0.052	0.174	0.130	0.203	0.134	0.033	-0.078	-0.051	-0.409
281.4	0.029	0.046	0.164	0.123	0.203	0.140	0.042	-0.080	-0.055	-0.408
282.8	0.028	0.041	0.161	0.119	0.201	0.146	0.048	-0.076	-0.053	-0.408
284.2	0.029	0.036	0.156	0.113	0.195	0.149	0.053	-0.077	-0.055	-0.408
285.6	0.030	0.030	0.144	0.105	0.186	0.149	0.059	-0.074	-0.057	-0.408
287.0	0.032	0.023	0.136	0.096	0.180	0.153	0.063	-0.065	-0.052	-0.408
288.4	0.031	0.018	0.132	0.090	0.174	0.156	0.071	-0.065	-0.047	-0.408
289.8	0.030	0.012	0.127	0.084	0.168	0.158	0.080	-0.063	-0.045	-0.408
291.2	0.030	0.006	0.123	0.079	0.162	0.161	0.085	-0.055	-0.045	-0.408
292.6	0.031	0.006	0.117	0.073	0.157	0.164	0.095	-0.051	-0.044	-0.408
294.0	0.028	0.004	0.119	0.068	0.147	0.158	0.099	-0.048	-0.041	-0.408
295.4	0.027	-0.003	0.113	0.058	0.134	0.149	0.097	-0.039	-0.033	-0.409
296.8	0.026	-0.008	0.104	0.049	0.126	0.144	0.100	-0.033	-0.024	-0.409
298.3	0.022	-0.011	0.102	0.044	0.115	0.135	0.100	-0.029	-0.022	-0.409
299.7	0.021	-0.015	0.094	0.037	0.101	0.121	0.094	-0.023	-0.021	-0.409
301.1	0.022	-0.018	0.087	0.030	0.092	0.110	0.089	-0.024	-0.017	-0.409
302.5	0.021	-0.023	0.079	0.022	0.084	0.102	0.087	-0.022	-0.011	-0.410
303.9	0.020	-0.029	0.076	0.018	0.077	0.094	0.085	-0.018	-0.013	-0.411
305.3	0.016	-0.027	0.074	0.016	0.066	0.084	0.081	-0.013	-0.007	-0.411
306.7	0.014	-0.025	0.068	0.014	0.060	0.072	0.079	-0.004	0.000	-0.411
308.1	0.013	-0.032	0.059	0.007	0.052	0.066	0.077	-0.005	-0.002	-0.411

Table 14. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.012	-0.031	0.054	0.000	0.043	0.059	0.073	-0.005	0.003	-0.411
310.9	0.012	-0.032	0.051	-0.004	0.042	0.054	0.071	-0.003	0.006	-0.412
312.3	0.009	-0.035	0.048	-0.005	0.034	0.048	0.065	0.004	0.010	-0.413
313.7	0.010	-0.034	0.045	-0.008	0.022	0.036	0.058	0.009	0.016	-0.413
315.1	0.013	-0.037	0.036	-0.015	0.019	0.038	0.061	0.004	0.017	-0.412
316.5	0.010	-0.039	0.033	-0.017	0.017	0.037	0.061	0.012	0.016	-0.412
317.9	0.010	-0.034	0.035	-0.013	0.014	0.031	0.055	0.024	0.028	-0.413
319.3	0.011	-0.030	0.036	-0.011	0.011	0.029	0.053	0.029	0.036	-0.412
320.8	0.013	-0.030	0.042	-0.012	0.011	0.026	0.053	0.037	0.040	-0.411
322.2	0.015	-0.023	0.047	-0.009	0.010	0.021	0.049	0.043	0.048	-0.411
323.6	0.016	-0.019	0.050	-0.005	0.010	0.019	0.043	0.046	0.057	-0.411
325.0	0.018	-0.017	0.048	-0.005	0.007	0.012	0.033	0.048	0.061	-0.411
326.4	0.022	-0.015	0.046	-0.004	0.004	0.004	0.020	0.045	0.059	-0.410
327.8	0.023	-0.016	0.048	-0.001	-0.001	-0.005	0.006	0.039	0.060	-0.409
329.2	0.023	-0.009	0.057	0.006	-0.003	-0.013	-0.002	0.031	0.054	-0.408
330.6	0.025	-0.006	0.058	0.008	-0.001	-0.018	-0.008	0.022	0.043	-0.407
332.0	0.027	-0.003	0.054	0.007	-0.002	-0.023	-0.020	0.010	0.035	-0.407
333.4	0.030	-0.005	0.053	0.011	0.000	-0.022	-0.024	0.003	0.027	-0.406
334.8	0.031	0.001	0.058	0.016	-0.002	-0.023	-0.032	-0.006	0.021	-0.405
336.2	0.034	0.008	0.066	0.023	0.001	-0.027	-0.042	-0.012	0.017	-0.405
337.6	0.038	0.012	0.073	0.032	0.009	-0.028	-0.049	-0.020	0.010	-0.405
339.0	0.043	0.027	0.090	0.045	0.016	-0.027	-0.055	-0.033	0.000	-0.405
340.4	0.043	0.036	0.105	0.062	0.026	-0.026	-0.059	-0.047	-0.012	-0.406
341.8	0.050	0.037	0.101	0.065	0.028	-0.025	-0.063	-0.052	-0.018	-0.406
343.3	0.059	0.036	0.096	0.063	0.033	-0.023	-0.061	-0.055	-0.022	-0.406
344.7	0.057	0.036	0.098	0.065	0.039	-0.020	-0.061	-0.062	-0.024	-0.406
346.1	0.057	0.040	0.110	0.069	0.043	-0.019	-0.063	-0.068	-0.029	-0.406
347.5	0.058	0.043	0.115	0.075	0.045	-0.019	-0.065	-0.076	-0.037	-0.406
348.9	0.058	0.048	0.117	0.080	0.050	-0.016	-0.063	-0.081	-0.044	-0.407
350.3	0.060	0.049	0.121	0.084	0.058	-0.011	-0.064	-0.081	-0.046	-0.407
351.7	0.059	0.049	0.123	0.087	0.069	-0.004	-0.064	-0.083	-0.045	-0.408
353.1	0.060	0.051	0.126	0.094	0.081	0.001	-0.060	-0.091	-0.053	-0.408
354.5	0.062	0.055	0.131	0.100	0.089	0.006	-0.061	-0.099	-0.059	-0.409
355.9	0.063	0.058	0.134	0.101	0.096	0.013	-0.060	-0.102	-0.061	-0.409
357.3	0.064	0.056	0.137	0.101	0.103	0.018	-0.058	-0.101	-0.061	-0.410
358.7	0.063	0.057	0.136	0.102	0.113	0.026	-0.052	-0.104	-0.059	-0.411

Table 15. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0820$, $\mu = 0.051$, $\alpha_s = 0.0°$, $\theta = 13.6°$, $A_1 = -1.3°$, $B_1 = 1.4°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.023	-0.101	0.466	0.483	0.308	-0.046	-0.006	-0.138	0.437	0.647	0.517
1.5	0.031	-0.087	0.469	0.486	0.308	-0.045	-0.001	-0.141	0.450	0.653	0.527
2.9	0.036	-0.086	0.472	0.491	0.313	-0.046	0.012	-0.140	0.461	0.663	0.541
4.3	0.038	-0.083	0.478	0.497	0.317	-0.047	0.018	-0.140	0.476	0.672	0.553
5.8	0.047	-0.076	0.484	0.506	0.323	-0.045	0.025	-0.137	0.499	0.687	0.557
7.2	0.053	-0.075	0.494	0.514	0.327	-0.044	0.037	-0.134	0.521	0.709	0.563
8.6	0.063	-0.064	0.498	0.519	0.329	-0.045	0.039	-0.131	0.544	0.726	0.570
10.0	0.071	-0.052	0.511	0.534	0.335	-0.047	0.045	-0.128	0.571	0.744	0.580
11.4	0.087	-0.033	0.520	0.541	0.335	-0.048	0.053	-0.126	0.600	0.765	0.591
12.8	0.099	-0.030	0.527	0.549	0.336	-0.050	0.060	-0.121	0.625	0.791	0.606
14.2	0.106	-0.011	0.542	0.562	0.337	-0.049	0.069	-0.116	0.652	0.819	0.625
15.6	0.126	0.006	0.546	0.566	0.342	-0.048	0.075	-0.110	0.679	0.847	0.631
17.0	0.138	0.027	0.563	0.580	0.346	-0.047	0.077	-0.104	0.706	0.872	0.639
18.4	0.158	0.060	0.581	0.598	0.350	-0.046	0.077	-0.098	0.733	0.901	0.660
19.8	0.174	0.079	0.590	0.605	0.353	-0.048	0.079	-0.096	0.764	0.934	0.699
21.2	0.190	0.105	0.603	0.617	0.358	-0.045	0.087	-0.090	0.795	0.967	0.720
22.6	0.208	0.124	0.615	0.627	0.364	-0.043	0.088	-0.080	0.824	1.007	0.738
24.0	0.214	0.140	0.629	0.643	0.366	-0.043	0.083	-0.071	0.851	1.041	0.753
25.4	0.235	0.185	0.649	0.657	0.369	-0.042	0.075	-0.063	0.875	1.063	0.760
26.8	0.257	0.202	0.662	0.672	0.371	-0.041	0.069	-0.057	0.892	1.087	0.773
28.3	0.253	0.210	0.668	0.679	0.375	-0.038	0.061	-0.052	0.900	1.103	0.783
29.7	0.276	0.245	0.691	0.694	0.382	-0.038	0.063	-0.047	0.912	1.112	0.779
31.1	0.283	0.261	0.699	0.708	0.383	-0.036	0.057	-0.037	0.903	1.111	0.766
32.5	0.284	0.281	0.709	0.716	0.388	-0.032	0.043	-0.030	0.871	1.085	0.773
33.9	0.298	0.303	0.719	0.723	0.391	-0.033	0.037	-0.029	0.849	1.067	0.780
35.3	0.300	0.315	0.724	0.732	0.391	-0.035	0.027	-0.026	0.815	1.042	0.767
36.7	0.286	0.313	0.726	0.739	0.390	-0.037	0.022	-0.023	0.780	1.019	0.738
38.1	0.280	0.329	0.725	0.738	0.388	-0.036	0.008	-0.021	0.766	0.979	0.701
39.5	0.276	0.333	0.728	0.743	0.391	-0.036	-0.010	-0.020	0.761	0.942	0.665
40.9	0.264	0.329	0.722	0.745	0.389	-0.037	-0.014	-0.026	0.747	0.922	0.654
42.3	0.259	0.331	0.721	0.740	0.387	-0.039	-0.014	-0.031	0.715	0.888	0.642
43.7	0.244	0.325	0.716	0.742	0.384	-0.036	-0.019	-0.030	0.696	0.871	0.619
45.1	0.219	0.314	0.710	0.741	0.382	-0.036	-0.027	-0.027	0.682	0.854	0.599
46.5	0.198	0.304	0.698	0.735	0.381	-0.041	-0.032	-0.020	0.662	0.821	0.589
47.9	0.179	0.290	0.684	0.726	0.378	-0.043	-0.034	-0.012	0.638	0.802	0.568
49.3	0.151	0.277	0.671	0.720	0.373	-0.042	-0.038	-0.006	0.621	0.786	0.562
50.8	0.133	0.262	0.662	0.716	0.371	-0.045	-0.043	-0.006	0.610	0.767	0.557
52.2	0.127	0.255	0.648	0.708	0.367	-0.044	-0.048	-0.008	0.595	0.756	0.550
53.6	0.114	0.245	0.639	0.697	0.361	-0.042	-0.054	-0.003	0.574	0.734	0.551
55.0	0.074	0.216	0.623	0.695	0.358	-0.045	-0.059	-0.005	0.551	0.709	0.534
56.4	0.056	0.209	0.606	0.686	0.352	-0.045	-0.069	-0.012	0.528	0.695	0.521
57.8	0.034	0.191	0.591	0.670	0.351	-0.048	-0.075	-0.018	0.508	0.676	0.507
59.2	0.012	0.175	0.570	0.658	0.350	-0.048	-0.077	-0.028	0.493	0.658	0.494
60.6	0.000	0.161	0.557	0.655	0.345	-0.048	-0.083	-0.037	0.478	0.644	0.486

Table 15. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	-0.017	0.154	0.546	0.647	0.343	-0.047	-0.088	-0.045	0.464	0.630	0.482
63.4	-0.037	0.144	0.539	0.641	0.340	-0.049	-0.092	-0.061	0.454	0.620	0.477
64.8	-0.051	0.135	0.529	0.640	0.336	-0.053	-0.096	-0.077	0.444	0.609	0.475
66.2	-0.058	0.121	0.509	0.630	0.331	-0.053	-0.097	-0.084	0.436	0.601	0.479
67.6	-0.070	0.111	0.496	0.617	0.332	-0.050	-0.094	-0.087	0.430	0.597	0.470
69.0	-0.077	0.104	0.487	0.614	0.331	-0.051	-0.092	-0.091	0.423	0.590	0.462
70.4	-0.097	0.092	0.480	0.613	0.326	-0.053	-0.084	-0.101	0.420	0.595	0.454
71.8	-0.087	0.099	0.481	0.612	0.325	-0.051	-0.084	-0.111	0.422	0.590	0.451
73.3	-0.091	0.086	0.469	0.610	0.321	-0.054	-0.085	-0.118	0.428	0.592	0.449
74.7	-0.107	0.080	0.457	0.601	0.323	-0.051	-0.079	-0.121	0.428	0.601	0.446
76.1	-0.104	0.076	0.452	0.599	0.320	-0.057	-0.079	-0.124	0.424	0.612	0.449
77.5	-0.114	0.068	0.447	0.600	0.318	-0.060	-0.077	-0.129	0.424	0.620	0.455
78.9	-0.107	0.083	0.451	0.601	0.316	-0.059	-0.070	-0.136	0.424	0.613	0.460
80.3	-0.091	0.076	0.442	0.602	0.311	-0.067	-0.062	-0.141	0.428	0.613	0.461
81.7	-0.103	0.063	0.430	0.596	0.311	-0.066	-0.058	-0.148	0.430	0.614	0.459
83.1	-0.105	0.062	0.425	0.589	0.311	-0.066	-0.056	-0.152	0.438	0.620	0.450
84.5	-0.101	0.072	0.427	0.595	0.304	-0.070	-0.045	-0.152	0.446	0.626	0.455
85.9	-0.092	0.074	0.430	0.600	0.301	-0.073	-0.040	-0.155	0.453	0.633	0.461
87.3	-0.091	0.068	0.424	0.595	0.304	-0.078	-0.034	-0.156	0.466	0.639	0.470
88.7	-0.088	0.073	0.421	0.594	0.301	-0.079	-0.025	-0.154	0.475	0.652	0.480
90.1	-0.078	0.073	0.427	0.603	0.300	-0.080	-0.015	-0.154	0.491	0.660	0.487
91.5	-0.073	0.076	0.428	0.603	0.302	-0.080	-0.005	-0.154	0.510	0.671	0.493
92.9	-0.068	0.078	0.424	0.602	0.305	-0.081	0.004	-0.151	0.527	0.680	0.504
94.3	-0.067	0.083	0.433	0.610	0.307	-0.084	0.014	-0.146	0.543	0.690	0.504
95.8	-0.055	0.094	0.435	0.615	0.308	-0.080	0.024	-0.141	0.559	0.700	0.508
97.2	-0.047	0.104	0.444	0.625	0.311	-0.079	0.032	-0.139	0.580	0.720	0.505
98.6	-0.036	0.112	0.455	0.634	0.318	-0.078	0.043	-0.136	0.603	0.742	0.503
100.0	-0.025	0.122	0.460	0.639	0.319	-0.082	0.049	-0.133	0.625	0.761	0.513
101.4	-0.022	0.132	0.467	0.646	0.318	-0.085	0.053	-0.130	0.653	0.787	0.539
102.8	-0.016	0.139	0.478	0.655	0.321	-0.087	0.061	-0.126	0.684	0.818	0.560
104.2	-0.005	0.156	0.491	0.664	0.323	-0.086	0.069	-0.121	0.708	0.848	0.575
105.6	0.016	0.168	0.500	0.670	0.323	-0.086	0.075	-0.117	0.734	0.880	0.613
107.0	0.031	0.182	0.505	0.676	0.325	-0.089	0.078	-0.111	0.764	0.906	0.637
108.4	0.050	0.199	0.520	0.687	0.328	-0.088	0.087	-0.106	0.791	0.939	0.650
109.8	0.069	0.212	0.537	0.699	0.329	-0.086	0.088	-0.100	0.820	0.978	0.663
111.2	0.079	0.225	0.546	0.705	0.332	-0.085	0.096	-0.091	0.846	1.009	0.683
112.6	0.096	0.244	0.558	0.714	0.338	-0.082	0.106	-0.082	0.872	1.048	0.706
114.0	0.115	0.260	0.573	0.725	0.342	-0.081	0.104	-0.073	0.899	1.083	0.721
115.4	0.137	0.278	0.590	0.737	0.343	-0.080	0.104	-0.063	0.917	1.111	0.735
116.8	0.145	0.291	0.605	0.750	0.345	-0.078	0.101	-0.054	0.927	1.136	0.748
118.3	0.163	0.298	0.616	0.759	0.350	-0.076	0.098	-0.046	0.936	1.153	0.765
119.7	0.180	0.315	0.627	0.765	0.354	-0.075	0.091	-0.041	0.939	1.165	0.771
121.1	0.189	0.323	0.639	0.774	0.356	-0.073	0.077	-0.036	0.925	1.160	0.766
122.5	0.208	0.336	0.651	0.783	0.354	-0.074	0.068	-0.037	0.911	1.136	0.757

Table 15. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.227	0.349	0.662	0.785	0.354	-0.076	0.063	-0.037	0.892	1.115	0.748
125.3	0.234	0.350	0.668	0.788	0.359	-0.074	0.049	-0.029	0.856	1.089	0.741
126.7	0.233	0.351	0.670	0.790	0.354	-0.078	0.033	-0.026	0.827	1.056	0.720
128.1	0.228	0.347	0.673	0.786	0.351	-0.081	0.022	-0.028	0.809	1.026	0.696
129.5	0.234	0.343	0.672	0.785	0.350	-0.080	0.015	-0.031	0.792	0.977	0.662
130.9	0.235	0.343	0.675	0.784	0.344	-0.080	0.009	-0.033	0.775	0.938	0.635
132.3	0.228	0.335	0.674	0.781	0.344	-0.079	0.004	-0.033	0.750	0.891	0.627
133.7	0.210	0.319	0.671	0.777	0.342	-0.078	-0.001	-0.028	0.721	0.854	0.611
135.1	0.196	0.302	0.666	0.769	0.340	-0.078	-0.006	-0.020	0.690	0.836	0.593
136.5	0.194	0.300	0.655	0.760	0.336	-0.081	-0.004	-0.012	0.668	0.819	0.575
137.9	0.193	0.297	0.649	0.752	0.330	-0.082	0.000	-0.002	0.659	0.805	0.560
139.3	0.182	0.276	0.648	0.744	0.323	-0.079	-0.006	0.006	0.661	0.788	0.552
140.8	0.161	0.253	0.636	0.736	0.323	-0.082	-0.011	0.011	0.648	0.773	0.548
142.2	0.138	0.229	0.626	0.726	0.323	-0.081	-0.016	0.011	0.629	0.754	0.540
143.6	0.129	0.213	0.612	0.715	0.319	-0.076	-0.020	0.013	0.607	0.745	0.534
145.0	0.121	0.205	0.602	0.701	0.317	-0.078	-0.026	0.017	0.587	0.718	0.526
146.4	0.109	0.184	0.599	0.692	0.315	-0.079	-0.033	0.016	0.566	0.692	0.515
147.8	0.103	0.172	0.586	0.685	0.312	-0.079	-0.033	0.014	0.553	0.675	0.500
149.2	0.091	0.152	0.577	0.670	0.307	-0.080	-0.041	0.009	0.536	0.666	0.492
150.6	0.063	0.126	0.564	0.659	0.305	-0.080	-0.050	-0.003	0.522	0.661	0.487
152.0	0.057	0.115	0.554	0.646	0.303	-0.078	-0.052	-0.012	0.519	0.653	0.479
153.4	0.041	0.096	0.544	0.635	0.302	-0.078	-0.053	-0.021	0.505	0.641	0.468
154.8	0.035	0.092	0.535	0.622	0.294	-0.080	-0.053	-0.029	0.496	0.631	0.464
156.2	0.028	0.086	0.527	0.611	0.290	-0.081	-0.056	-0.036	0.488	0.628	0.466
157.6	0.028	0.082	0.521	0.605	0.292	-0.079	-0.058	-0.045	0.478	0.625	0.463
159.0	0.016	0.058	0.513	0.600	0.288	-0.077	-0.054	-0.057	0.476	0.621	0.461
160.4	0.000	0.045	0.501	0.590	0.286	-0.080	-0.050	-0.066	0.469	0.619	0.457
161.8	-0.003	0.045	0.494	0.576	0.287	-0.080	-0.049	-0.070	0.465	0.617	0.452
163.3	-0.001	0.046	0.494	0.577	0.284	-0.078	-0.048	-0.077	0.467	0.614	0.449
164.7	-0.006	0.030	0.484	0.570	0.283	-0.078	-0.047	-0.085	0.467	0.619	0.451
166.1	-0.019	0.026	0.473	0.556	0.280	-0.083	-0.050	-0.092	0.464	0.624	0.445
167.5	-0.017	0.031	0.473	0.556	0.277	-0.086	-0.048	-0.099	0.461	0.631	0.440
168.9	-0.020	0.021	0.469	0.555	0.275	-0.087	-0.040	-0.104	0.459	0.630	0.448
170.3	-0.020	0.019	0.470	0.552	0.269	-0.092	-0.033	-0.108	0.457	0.629	0.457
171.7	-0.020	0.020	0.463	0.547	0.267	-0.093	-0.029	-0.112	0.463	0.627	0.455
173.1	-0.017	0.020	0.455	0.540	0.270	-0.093	-0.023	-0.117	0.469	0.629	0.451
174.5	-0.022	0.019	0.453	0.534	0.266	-0.097	-0.016	-0.122	0.475	0.633	0.462
175.9	-0.015	0.039	0.457	0.532	0.262	-0.098	-0.006	-0.124	0.483	0.641	0.459
177.3	-0.006	0.047	0.460	0.531	0.262	-0.098	0.005	-0.125	0.490	0.645	0.460
178.7	0.002	0.052	0.455	0.527	0.263	-0.102	0.013	-0.125	0.502	0.644	0.469
180.1	0.001	0.042	0.452	0.525	0.266	-0.098	0.021	-0.127	0.514	0.658	0.483
181.5	-0.006	0.037	0.453	0.522	0.265	-0.100	0.029	-0.127	0.524	0.670	0.497
182.9	-0.001	0.049	0.459	0.526	0.261	-0.104	0.043	-0.126	0.536	0.683	0.514
184.3	0.016	0.055	0.467	0.533	0.265	-0.102	0.057	-0.123	0.553	0.695	0.525

Table 15. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.024	0.051	0.470	0.535	0.270	-0.098	0.064	-0.122	0.569	0.706	0.533
187.2	0.030	0.064	0.477	0.539	0.274	-0.095	0.069	-0.119	0.587	0.719	0.543
188.6	0.040	0.065	0.483	0.541	0.276	-0.094	0.080	-0.117	0.608	0.736	0.548
190.0	0.039	0.072	0.489	0.545	0.278	-0.096	0.089	-0.118	0.631	0.761	0.554
191.4	0.054	0.094	0.505	0.556	0.279	-0.096	0.097	-0.116	0.655	0.786	0.560
192.8	0.065	0.094	0.511	0.553	0.285	-0.093	0.109	-0.110	0.678	0.816	0.569
194.2	0.061	0.110	0.522	0.560	0.288	-0.093	0.116	-0.104	0.706	0.845	0.576
195.6	0.088	0.129	0.538	0.573	0.289	-0.095	0.118	-0.098	0.737	0.876	0.596
197.0	0.094	0.132	0.547	0.574	0.292	-0.092	0.125	-0.093	0.768	0.909	0.614
198.4	0.100	0.162	0.560	0.580	0.296	-0.091	0.130	-0.085	0.796	0.945	0.641
199.8	0.120	0.171	0.571	0.585	0.296	-0.089	0.131	-0.077	0.827	0.983	0.667
201.2	0.137	0.190	0.589	0.592	0.299	-0.086	0.133	-0.072	0.862	1.024	0.682
202.6	0.152	0.202	0.596	0.602	0.302	-0.085	0.134	-0.066	0.890	1.069	0.702
204.0	0.159	0.212	0.602	0.602	0.303	-0.085	0.129	-0.056	0.918	1.104	0.718
205.4	0.171	0.235	0.612	0.607	0.307	-0.084	0.126	-0.047	0.941	1.131	0.731
206.8	0.179	0.249	0.623	0.620	0.306	-0.080	0.118	-0.036	0.967	1.156	0.736
208.3	0.197	0.276	0.634	0.623	0.309	-0.077	0.107	-0.026	0.979	1.181	0.741
209.7	0.205	0.285	0.645	0.631	0.313	-0.078	0.099	-0.024	0.963	1.194	0.748
211.1	0.202	0.282	0.648	0.638	0.314	-0.077	0.091	-0.019	0.951	1.192	0.754
212.5	0.210	0.304	0.653	0.634	0.318	-0.075	0.077	-0.014	0.935	1.186	0.754
213.9	0.227	0.316	0.662	0.640	0.323	-0.072	0.062	-0.009	0.911	1.150	0.716
215.3	0.216	0.312	0.658	0.640	0.320	-0.072	0.045	-0.006	0.880	1.114	0.707
216.7	0.221	0.329	0.668	0.638	0.317	-0.073	0.030	-0.008	0.865	1.087	0.718
218.1	0.219	0.329	0.672	0.646	0.316	-0.074	0.024	-0.012	0.839	1.057	0.680
219.5	0.201	0.319	0.666	0.638	0.315	-0.070	0.016	-0.009	0.799	1.016	0.649
220.9	0.198	0.326	0.664	0.632	0.315	-0.069	0.007	-0.003	0.779	0.981	0.624
222.3	0.184	0.319	0.664	0.632	0.315	-0.072	0.003	-0.004	0.766	0.932	0.596
223.7	0.180	0.314	0.656	0.630	0.314	-0.071	-0.003	0.000	0.747	0.900	0.584
225.1	0.171	0.314	0.657	0.622	0.310	-0.070	-0.006	0.006	0.723	0.888	0.580
226.5	0.141	0.291	0.651	0.620	0.313	-0.071	-0.004	0.012	0.707	0.863	0.560
227.9	0.132	0.289	0.635	0.614	0.310	-0.070	-0.006	0.024	0.698	0.850	0.533
229.3	0.119	0.286	0.632	0.605	0.304	-0.074	-0.010	0.036	0.673	0.826	0.516
230.8	0.109	0.272	0.634	0.602	0.304	-0.072	-0.012	0.040	0.654	0.798	0.509
232.2	0.105	0.266	0.616	0.592	0.305	-0.070	-0.017	0.041	0.627	0.784	0.501
233.6	0.080	0.248	0.603	0.578	0.304	-0.068	-0.015	0.044	0.606	0.762	0.500
235.0	0.061	0.225	0.597	0.576	0.305	-0.064	-0.014	0.049	0.588	0.745	0.495
236.4	0.048	0.211	0.579	0.568	0.302	-0.067	-0.024	0.051	0.563	0.737	0.488
237.8	0.039	0.203	0.573	0.556	0.301	-0.069	-0.028	0.045	0.551	0.717	0.479
239.2	0.029	0.193	0.567	0.551	0.301	-0.068	-0.037	0.036	0.544	0.702	0.469
240.6	0.012	0.176	0.558	0.547	0.300	-0.067	-0.041	0.026	0.530	0.688	0.465
242.0	0.005	0.166	0.551	0.541	0.302	-0.064	-0.046	0.014	0.515	0.676	0.461
243.4	-0.003	0.161	0.537	0.532	0.298	-0.064	-0.053	0.003	0.507	0.663	0.446
244.8	-0.021	0.151	0.528	0.522	0.296	-0.067	-0.053	-0.005	0.497	0.654	0.437
246.2	-0.031	0.138	0.522	0.516	0.295	-0.068	-0.053	-0.012	0.491	0.648	0.433

Table 15. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	-0.044	0.121	0.515	0.507	0.295	-0.067	-0.056	-0.019	0.480	0.639	0.426
249.0	-0.053	0.114	0.506	0.497	0.297	-0.065	-0.055	-0.031	0.470	0.633	0.422
250.4	-0.057	0.114	0.504	0.494	0.298	-0.065	-0.053	-0.043	0.465	0.627	0.428
251.8	-0.050	0.110	0.501	0.496	0.292	-0.068	-0.052	-0.053	0.467	0.618	0.429
253.3	-0.055	0.104	0.504	0.497	0.292	-0.064	-0.053	-0.061	0.471	0.612	0.424
254.7	-0.074	0.092	0.496	0.491	0.294	-0.066	-0.052	-0.070	0.469	0.621	0.421
256.1	-0.073	0.089	0.482	0.481	0.294	-0.068	-0.049	-0.078	0.460	0.624	0.424
257.5	-0.077	0.085	0.480	0.475	0.293	-0.070	-0.046	-0.087	0.454	0.628	0.431
258.9	-0.067	0.095	0.488	0.479	0.288	-0.071	-0.043	-0.096	0.450	0.632	0.448
260.3	-0.059	0.087	0.483	0.479	0.289	-0.072	-0.038	-0.102	0.447	0.630	0.453
261.7	-0.057	0.080	0.477	0.472	0.289	-0.074	-0.035	-0.107	0.450	0.630	0.442
263.1	-0.051	0.083	0.478	0.473	0.291	-0.074	-0.026	-0.111	0.451	0.624	0.444
264.5	-0.048	0.090	0.480	0.476	0.289	-0.077	-0.020	-0.114	0.456	0.626	0.444
265.9	-0.037	0.090	0.479	0.472	0.284	-0.079	-0.010	-0.120	0.467	0.626	0.441
267.3	-0.035	0.089	0.482	0.472	0.285	-0.080	0.002	-0.119	0.475	0.630	0.454
268.7	-0.027	0.096	0.483	0.472	0.292	-0.077	0.008	-0.117	0.488	0.634	0.463
270.1	-0.027	0.092	0.480	0.472	0.293	-0.077	0.019	-0.119	0.501	0.641	0.468
271.5	-0.030	0.095	0.484	0.477	0.291	-0.077	0.028	-0.122	0.510	0.654	0.481
272.9	-0.021	0.103	0.490	0.479	0.295	-0.076	0.046	-0.123	0.526	0.666	0.489
274.3	-0.004	0.108	0.495	0.483	0.298	-0.076	0.059	-0.121	0.541	0.681	0.501
275.8	-0.003	0.114	0.503	0.489	0.300	-0.072	0.066	-0.119	0.552	0.693	0.513
277.2	0.005	0.124	0.513	0.496	0.304	-0.072	0.080	-0.117	0.569	0.708	0.522
278.6	0.027	0.125	0.520	0.504	0.307	-0.071	0.092	-0.115	0.589	0.725	0.523
280.0	0.032	0.134	0.529	0.505	0.308	-0.069	0.100	-0.110	0.613	0.743	0.520
281.4	0.048	0.142	0.534	0.513	0.308	-0.068	0.105	-0.108	0.636	0.766	0.538
282.8	0.060	0.148	0.544	0.519	0.311	-0.065	0.116	-0.105	0.660	0.790	0.561
284.2	0.074	0.158	0.552	0.522	0.316	-0.066	0.124	-0.101	0.686	0.816	0.575
285.6	0.093	0.167	0.564	0.533	0.313	-0.067	0.127	-0.099	0.709	0.842	0.590
287.0	0.109	0.172	0.574	0.537	0.316	-0.065	0.126	-0.093	0.732	0.876	0.610
288.4	0.123	0.194	0.589	0.549	0.320	-0.064	0.120	-0.087	0.753	0.910	0.626
289.8	0.145	0.204	0.596	0.558	0.322	-0.063	0.119	-0.084	0.784	0.939	0.648
291.2	0.156	0.210	0.606	0.558	0.322	-0.064	0.125	-0.078	0.817	0.980	0.660
292.6	0.178	0.232	0.626	0.578	0.322	-0.061	0.130	-0.070	0.838	1.015	0.676
294.0	0.191	0.241	0.633	0.580	0.326	-0.056	0.130	-0.060	0.864	1.039	0.689
295.4	0.207	0.255	0.646	0.588	0.330	-0.057	0.128	-0.051	0.891	1.069	0.698
296.8	0.222	0.269	0.658	0.599	0.335	-0.054	0.124	-0.041	0.910	1.099	0.715
298.3	0.247	0.288	0.675	0.608	0.340	-0.049	0.115	-0.033	0.919	1.119	0.728
299.7	0.267	0.295	0.682	0.620	0.341	-0.046	0.107	-0.024	0.922	1.125	0.722
301.1	0.260	0.295	0.695	0.627	0.347	-0.041	0.098	-0.019	0.918	1.128	0.723
302.5	0.272	0.306	0.701	0.631	0.350	-0.041	0.082	-0.015	0.906	1.108	0.719
303.9	0.301	0.325	0.711	0.633	0.348	-0.041	0.071	-0.013	0.872	1.072	0.696
305.3	0.299	0.322	0.717	0.638	0.351	-0.037	0.056	-0.010	0.824	1.032	0.681
306.7	0.301	0.328	0.722	0.642	0.351	-0.037	0.048	-0.005	0.781	1.012	0.676
308.1	0.299	0.321	0.728	0.647	0.350	-0.038	0.041	-0.005	0.746	1.004	0.662

Table 15. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.305	0.323	0.720	0.645	0.350	-0.033	0.027	-0.005	0.751	0.957	0.616
310.9	0.295	0.307	0.731	0.645	0.350	-0.037	0.014	-0.005	0.757	0.911	0.599
312.3	0.271	0.291	0.717	0.649	0.349	-0.036	0.005	-0.006	0.737	0.885	0.590
313.7	0.273	0.294	0.714	0.634	0.346	-0.035	0.006	-0.006	0.715	0.870	0.563
315.1	0.262	0.270	0.720	0.636	0.348	-0.032	0.001	-0.001	0.688	0.851	0.541
316.5	0.254	0.267	0.698	0.632	0.346	-0.031	-0.003	0.009	0.675	0.833	0.529
317.9	0.238	0.247	0.697	0.622	0.344	-0.033	-0.004	0.018	0.653	0.822	0.535
319.3	0.225	0.232	0.691	0.627	0.344	-0.030	-0.004	0.022	0.633	0.800	0.522
320.8	0.201	0.208	0.679	0.624	0.339	-0.031	-0.002	0.029	0.625	0.778	0.515
322.2	0.185	0.195	0.665	0.611	0.338	-0.030	-0.008	0.037	0.603	0.764	0.524
323.6	0.172	0.180	0.655	0.601	0.335	-0.030	-0.014	0.039	0.584	0.750	0.500
325.0	0.158	0.165	0.639	0.592	0.331	-0.033	-0.025	0.038	0.568	0.735	0.482
326.4	0.143	0.151	0.625	0.578	0.329	-0.032	-0.030	0.036	0.550	0.720	0.478
327.8	0.130	0.130	0.613	0.564	0.327	-0.030	-0.039	0.030	0.533	0.706	0.465
329.2	0.111	0.106	0.596	0.559	0.327	-0.029	-0.042	0.023	0.513	0.689	0.453
330.6	0.095	0.087	0.581	0.551	0.322	-0.027	-0.049	0.012	0.494	0.677	0.441
332.0	0.075	0.067	0.571	0.541	0.323	-0.026	-0.055	-0.002	0.477	0.669	0.433
333.4	0.066	0.057	0.557	0.536	0.322	-0.033	-0.061	-0.012	0.465	0.657	0.426
334.8	0.065	0.050	0.551	0.526	0.318	-0.034	-0.067	-0.022	0.450	0.648	0.423
336.2	0.059	0.040	0.541	0.523	0.316	-0.031	-0.066	-0.033	0.441	0.640	0.429
337.6	0.047	0.023	0.532	0.518	0.316	-0.029	-0.066	-0.042	0.432	0.637	0.443
339.0	0.038	0.007	0.522	0.512	0.316	-0.027	-0.063	-0.051	0.422	0.631	0.444
340.4	0.030	-0.005	0.509	0.503	0.318	-0.026	-0.059	-0.058	0.416	0.629	0.437
341.8	0.029	-0.010	0.509	0.503	0.318	-0.027	-0.056	-0.068	0.416	0.621	0.426
343.3	0.028	-0.025	0.505	0.501	0.315	-0.027	-0.057	-0.077	0.417	0.618	0.428
344.7	0.020	-0.042	0.493	0.494	0.315	-0.028	-0.058	-0.088	0.411	0.620	0.441
346.1	0.014	-0.054	0.484	0.487	0.315	-0.029	-0.052	-0.095	0.408	0.621	0.445
347.5	0.011	-0.055	0.481	0.484	0.313	-0.032	-0.049	-0.100	0.403	0.622	0.455
348.9	0.028	-0.051	0.485	0.488	0.312	-0.032	-0.048	-0.107	0.399	0.618	0.469
350.3	0.024	-0.075	0.483	0.493	0.311	-0.035	-0.048	-0.115	0.396	0.613	0.485
351.7	0.009	-0.091	0.469	0.481	0.313	-0.038	-0.046	-0.122	0.398	0.615	0.486
353.1	0.016	-0.086	0.465	0.477	0.313	-0.036	-0.039	-0.127	0.401	0.617	0.484
354.5	0.014	-0.090	0.470	0.481	0.307	-0.039	-0.033	-0.129	0.408	0.625	0.478
355.9	0.014	-0.090	0.467	0.478	0.304	-0.040	-0.027	-0.132	0.411	0.634	0.469
357.3	0.025	-0.089	0.467	0.481	0.305	-0.045	-0.021	-0.134	0.412	0.636	0.485
358.7	0.026	-0.098	0.467	0.481	0.307	-0.045	-0.011	-0.136	0.426	0.643	0.502

Table 16. Modified unsteady pressure coefficients around the body at x/l = 0.90. C_T/σ = 0.0820, μ = 0.051, α_s = 0.0°, θ = 13.6°, A_1 = −1.3°, B_1 = 1.4°.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	-0.018	0.048	0.127	0.101	0.094	-0.006	-0.096	-0.151	-0.138	-0.428
1.5	-0.019	0.050	0.134	0.103	0.102	-0.001	-0.092	-0.151	-0.140	-0.428
2.9	-0.020	0.047	0.135	0.106	0.110	0.012	-0.082	-0.150	-0.138	-0.429
4.3	-0.019	0.045	0.135	0.105	0.116	0.018	-0.074	-0.152	-0.139	-0.430
5.8	-0.020	0.041	0.136	0.103	0.123	0.025	-0.067	-0.150	-0.137	-0.430
7.2	-0.019	0.041	0.131	0.101	0.126	0.037	-0.056	-0.149	-0.137	-0.430
8.6	-0.019	0.037	0.134	0.098	0.121	0.039	-0.048	-0.147	-0.135	-0.430
10.0	-0.016	0.032	0.130	0.092	0.118	0.045	-0.043	-0.145	-0.130	-0.430
11.4	-0.013	0.029	0.120	0.086	0.120	0.053	-0.033	-0.140	-0.129	-0.431
12.8	-0.015	0.026	0.116	0.084	0.122	0.060	-0.023	-0.137	-0.128	-0.431
14.2	-0.017	0.019	0.108	0.080	0.116	0.069	-0.011	-0.134	-0.124	-0.432
15.6	-0.015	0.013	0.101	0.072	0.111	0.075	-0.001	-0.132	-0.119	-0.432
17.0	-0.011	0.011	0.098	0.067	0.104	0.077	0.006	-0.125	-0.117	-0.432
18.4	-0.010	0.006	0.096	0.059	0.096	0.077	0.009	-0.120	-0.113	-0.432
19.8	-0.011	0.000	0.091	0.048	0.090	0.079	0.018	-0.116	-0.106	-0.431
21.2	-0.010	-0.006	0.082	0.038	0.083	0.087	0.030	-0.115	-0.106	-0.431
22.6	-0.009	-0.013	0.071	0.028	0.076	0.088	0.037	-0.106	-0.098	-0.430
24.0	-0.008	-0.016	0.066	0.025	0.067	0.083	0.044	-0.093	-0.089	-0.431
25.4	-0.008	-0.014	0.060	0.018	0.059	0.075	0.045	-0.088	-0.084	-0.431
26.8	-0.006	-0.024	0.049	0.006	0.050	0.069	0.046	-0.083	-0.079	-0.432
28.3	-0.002	-0.028	0.043	0.001	0.039	0.061	0.045	-0.073	-0.073	-0.432
29.7	-0.003	-0.034	0.035	-0.006	0.032	0.063	0.046	-0.069	-0.065	-0.431
31.1	-0.005	-0.039	0.034	-0.011	0.024	0.057	0.053	-0.066	-0.066	-0.431
32.5	-0.004	-0.039	0.031	-0.012	0.013	0.043	0.047	-0.057	-0.064	-0.430
33.9	-0.003	-0.038	0.024	-0.015	0.004	0.037	0.042	-0.053	-0.055	-0.430
35.3	-0.001	-0.040	0.018	-0.020	-0.002	0.027	0.045	-0.050	-0.056	-0.430
36.7	-0.001	-0.048	0.005	-0.027	-0.009	0.022	0.044	-0.046	-0.056	-0.430
38.1	0.002	-0.051	0.002	-0.028	-0.019	0.008	0.030	-0.043	-0.055	-0.430
39.5	0.001	-0.057	-0.009	-0.037	-0.034	-0.010	0.011	-0.039	-0.052	-0.431
40.9	0.004	-0.058	-0.011	-0.042	-0.038	-0.014	0.008	-0.048	-0.055	-0.430
42.3	0.001	-0.063	-0.015	-0.045	-0.038	-0.014	0.006	-0.056	-0.067	-0.431
43.7	0.000	-0.069	-0.020	-0.048	-0.044	-0.019	0.005	-0.053	-0.068	-0.431
45.1	0.004	-0.067	-0.019	-0.046	-0.045	-0.027	0.003	-0.044	-0.063	-0.432
46.5	0.000	-0.065	-0.021	-0.044	-0.047	-0.032	0.001	-0.042	-0.063	-0.433
47.9	0.000	-0.062	-0.019	-0.041	-0.052	-0.034	-0.001	-0.035	-0.060	-0.434
49.3	0.004	-0.059	-0.023	-0.038	-0.055	-0.038	-0.007	-0.025	-0.047	-0.435
50.8	0.004	-0.057	-0.019	-0.038	-0.056	-0.043	-0.012	-0.030	-0.044	-0.435
52.2	0.006	-0.055	-0.012	-0.034	-0.056	-0.048	-0.016	-0.030	-0.047	-0.436
53.6	0.007	-0.052	-0.008	-0.032	-0.059	-0.054	-0.024	-0.021	-0.045	-0.435
55.0	0.010	-0.048	-0.005	-0.031	-0.063	-0.059	-0.033	-0.022	-0.042	-0.435
56.4	0.014	-0.047	0.002	-0.026	-0.067	-0.069	-0.046	-0.026	-0.044	-0.434
57.8	0.014	-0.046	0.002	-0.026	-0.069	-0.075	-0.056	-0.032	-0.043	-0.434
59.2	0.017	-0.042	0.001	-0.025	-0.072	-0.077	-0.059	-0.044	-0.046	-0.434
60.6	0.019	-0.037	0.007	-0.020	-0.071	-0.083	-0.069	-0.050	-0.053	-0.434

Table 16. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.018	-0.030	0.014	-0.015	-0.066	-0.088	-0.079	-0.054	-0.064	-0.433
63.4	0.023	-0.029	0.016	-0.010	-0.065	-0.092	-0.090	-0.069	-0.074	-0.432
64.8	0.028	-0.019	0.020	-0.002	-0.065	-0.096	-0.095	-0.080	-0.084	-0.432
66.2	0.027	-0.010	0.033	0.009	-0.062	-0.097	-0.098	-0.093	-0.092	-0.433
67.6	0.031	0.002	0.048	0.023	-0.051	-0.094	-0.106	-0.098	-0.104	-0.434
69.0	0.036	0.010	0.061	0.034	-0.038	-0.092	-0.107	-0.098	-0.111	-0.434
70.4	0.044	0.010	0.061	0.036	-0.031	-0.084	-0.110	-0.113	-0.114	-0.435
71.8	0.054	0.017	0.068	0.045	-0.023	-0.084	-0.109	-0.128	-0.129	-0.436
73.3	0.052	0.022	0.079	0.051	-0.018	-0.085	-0.111	-0.132	-0.132	-0.436
74.7	0.049	0.032	0.083	0.053	-0.013	-0.079	-0.114	-0.132	-0.135	-0.437
76.1	0.055	0.029	0.092	0.060	-0.003	-0.079	-0.113	-0.141	-0.138	-0.437
77.5	0.053	0.029	0.098	0.066	0.007	-0.077	-0.118	-0.148	-0.144	-0.437
78.9	0.055	0.038	0.108	0.077	0.019	-0.070	-0.120	-0.153	-0.154	-0.437
80.3	0.056	0.041	0.110	0.082	0.030	-0.062	-0.117	-0.159	-0.156	-0.437
81.7	0.053	0.040	0.109	0.087	0.036	-0.058	-0.118	-0.163	-0.162	-0.437
83.1	0.056	0.043	0.116	0.093	0.045	-0.056	-0.118	-0.168	-0.167	-0.437
84.5	0.058	0.047	0.122	0.098	0.055	-0.045	-0.112	-0.168	-0.165	-0.438
85.9	0.057	0.047	0.129	0.106	0.065	-0.040	-0.109	-0.169	-0.167	-0.439
87.3	0.055	0.050	0.137	0.107	0.076	-0.034	-0.106	-0.173	-0.167	-0.440
88.7	0.056	0.046	0.143	0.106	0.087	-0.025	-0.100	-0.173	-0.168	-0.441
90.1	0.062	0.049	0.144	0.111	0.099	-0.015	-0.094	-0.174	-0.166	-0.442
91.5	0.062	0.054	0.150	0.115	0.107	-0.005	-0.088	-0.178	-0.169	-0.442
92.9	0.059	0.052	0.150	0.115	0.116	0.004	-0.082	-0.175	-0.169	-0.443
94.3	0.059	0.043	0.143	0.111	0.122	0.014	-0.077	-0.175	-0.167	-0.444
95.8	0.063	0.041	0.141	0.114	0.129	0.024	-0.069	-0.171	-0.166	-0.444
97.2	0.061	0.043	0.142	0.115	0.135	0.032	-0.060	-0.172	-0.162	-0.444
98.6	0.062	0.045	0.145	0.112	0.140	0.043	-0.053	-0.168	-0.158	-0.444
100.0	0.066	0.039	0.139	0.106	0.140	0.049	-0.048	-0.160	-0.155	-0.444
101.4	0.071	0.033	0.132	0.103	0.139	0.053	-0.038	-0.164	-0.158	-0.444
102.8	0.070	0.028	0.131	0.098	0.140	0.061	-0.028	-0.158	-0.154	-0.445
104.2	0.070	0.024	0.127	0.088	0.137	0.069	-0.025	-0.149	-0.148	-0.445
105.6	0.068	0.017	0.118	0.081	0.131	0.075	-0.016	-0.148	-0.135	-0.446
107.0	0.070	0.014	0.114	0.074	0.127	0.078	-0.008	-0.140	-0.128	-0.446
108.4	0.072	0.010	0.105	0.068	0.121	0.087	-0.002	-0.133	-0.124	-0.446
109.8	0.071	0.002	0.099	0.062	0.114	0.088	0.010	-0.128	-0.118	-0.446
111.2	0.072	-0.001	0.096	0.056	0.113	0.096	0.020	-0.121	-0.112	-0.447
112.6	0.068	-0.007	0.091	0.053	0.113	0.106	0.033	-0.112	-0.106	-0.448
114.0	0.068	-0.007	0.097	0.051	0.105	0.104	0.042	-0.100	-0.092	-0.448
115.4	0.067	-0.008	0.093	0.042	0.098	0.104	0.046	-0.089	-0.082	-0.448
116.8	0.068	-0.013	0.088	0.036	0.090	0.101	0.053	-0.080	-0.073	-0.447
118.3	0.068	-0.019	0.086	0.031	0.077	0.098	0.061	-0.071	-0.067	-0.447
119.7	0.066	-0.025	0.079	0.019	0.069	0.091	0.059	-0.065	-0.067	-0.447
121.1	0.065	-0.027	0.073	0.014	0.053	0.077	0.052	-0.060	-0.065	-0.447
122.5	0.064	-0.029	0.063	0.007	0.047	0.068	0.047	-0.059	-0.062	-0.448

Table 16. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.066	-0.028	0.057	0.007	0.045	0.063	0.050	-0.059	-0.054	-0.448
125.3	0.064	-0.036	0.051	0.000	0.028	0.049	0.045	-0.053	-0.054	-0.449
126.7	0.062	-0.037	0.040	-0.012	0.015	0.033	0.031	-0.045	-0.049	-0.450
128.1	0.063	-0.043	0.032	-0.016	0.009	0.022	0.023	-0.047	-0.043	-0.450
129.5	0.061	-0.050	0.022	-0.023	-0.001	0.015	0.019	-0.050	-0.051	-0.452
130.9	0.060	-0.049	0.017	-0.027	-0.007	0.009	0.018	-0.052	-0.049	-0.453
132.3	0.058	-0.050	0.015	-0.029	-0.009	0.004	0.016	-0.052	-0.050	-0.454
133.7	0.057	-0.055	0.007	-0.031	-0.016	-0.001	0.013	-0.044	-0.042	-0.453
135.1	0.060	-0.052	0.007	-0.031	-0.017	-0.006	0.013	-0.032	-0.035	-0.453
136.5	0.059	-0.050	0.008	-0.028	-0.017	-0.004	0.019	-0.028	-0.036	-0.453
137.9	0.056	-0.047	0.009	-0.029	-0.017	0.000	0.021	-0.020	-0.029	-0.452
139.3	0.061	-0.040	0.012	-0.026	-0.019	-0.006	0.018	-0.006	-0.021	-0.452
140.8	0.064	-0.038	0.015	-0.025	-0.022	-0.011	0.013	-0.005	-0.010	-0.452
142.2	0.066	-0.041	0.014	-0.025	-0.020	-0.016	0.011	-0.003	-0.011	-0.451
143.6	0.068	-0.036	0.014	-0.024	-0.016	-0.020	0.010	0.007	-0.011	-0.450
145.0	0.070	-0.030	0.017	-0.018	-0.021	-0.026	0.002	0.013	-0.004	-0.450
146.4	0.068	-0.029	0.025	-0.012	-0.026	-0.033	-0.005	0.006	-0.007	-0.450
147.8	0.071	-0.018	0.026	-0.011	-0.022	-0.033	-0.014	0.012	-0.004	-0.450
149.2	0.076	-0.015	0.027	-0.010	-0.020	-0.041	-0.023	0.007	-0.001	-0.449
150.6	0.078	-0.015	0.035	-0.005	-0.021	-0.050	-0.035	-0.008	-0.009	-0.448
152.0	0.080	-0.005	0.042	0.001	-0.024	-0.052	-0.046	-0.018	-0.019	-0.448
153.4	0.080	-0.001	0.044	0.005	-0.020	-0.053	-0.052	-0.027	-0.026	-0.448
154.8	0.085	0.005	0.051	0.011	-0.015	-0.053	-0.057	-0.031	-0.030	-0.448
156.2	0.090	0.018	0.063	0.024	-0.012	-0.056	-0.066	-0.036	-0.031	-0.447
157.6	0.092	0.028	0.077	0.040	-0.002	-0.058	-0.075	-0.047	-0.036	-0.447
159.0	0.097	0.034	0.088	0.051	0.007	-0.054	-0.075	-0.059	-0.047	-0.447
160.4	0.101	0.033	0.089	0.056	0.014	-0.050	-0.077	-0.069	-0.057	-0.448
161.8	0.106	0.039	0.095	0.060	0.018	-0.049	-0.082	-0.069	-0.061	-0.448
163.3	0.105	0.043	0.102	0.067	0.028	-0.048	-0.080	-0.077	-0.069	-0.448
164.7	0.102	0.040	0.098	0.068	0.037	-0.047	-0.086	-0.090	-0.076	-0.448
166.1	0.106	0.038	0.110	0.074	0.040	-0.050	-0.089	-0.097	-0.081	-0.448
167.5	0.108	0.041	0.126	0.082	0.049	-0.048	-0.091	-0.103	-0.089	-0.448
168.9	0.105	0.046	0.127	0.087	0.062	-0.040	-0.093	-0.107	-0.092	-0.448
170.3	0.108	0.055	0.135	0.093	0.072	-0.033	-0.087	-0.110	-0.099	-0.449
171.7	0.111	0.056	0.146	0.105	0.084	-0.029	-0.085	-0.119	-0.106	-0.449
173.1	0.111	0.061	0.154	0.115	0.093	-0.023	-0.088	-0.124	-0.110	-0.449
174.5	0.115	0.065	0.153	0.116	0.101	-0.016	-0.086	-0.131	-0.116	-0.449
175.9	0.117	0.060	0.156	0.120	0.111	-0.006	-0.081	-0.134	-0.119	-0.449
177.3	0.113	0.064	0.172	0.128	0.123	0.005	-0.074	-0.132	-0.121	-0.449
178.7	0.115	0.066	0.176	0.132	0.133	0.013	-0.072	-0.132	-0.124	-0.449
180.1	0.120	0.064	0.176	0.133	0.137	0.021	-0.069	-0.136	-0.127	-0.449
181.5	0.120	0.062	0.173	0.133	0.150	0.029	-0.060	-0.135	-0.128	-0.448
182.9	0.118	0.057	0.173	0.135	0.163	0.043	-0.052	-0.134	-0.124	-0.448
184.3	0.118	0.058	0.178	0.136	0.171	0.057	-0.042	-0.132	-0.122	-0.447

Table 16. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.118	0.052	0.175	0.134	0.174	0.064	-0.035	-0.132	-0.123	-0.447
187.2	0.119	0.049	0.176	0.132	0.176	0.069	-0.031	-0.127	-0.122	-0.446
188.6	0.118	0.048	0.171	0.132	0.183	0.080	-0.023	-0.129	-0.121	-0.447
190.0	0.115	0.041	0.162	0.128	0.187	0.089	-0.015	-0.128	-0.122	-0.446
191.4	0.118	0.037	0.156	0.124	0.188	0.097	-0.007	-0.123	-0.119	-0.446
192.8	0.120	0.034	0.154	0.121	0.185	0.109	0.001	-0.123	-0.117	-0.446
194.2	0.115	0.034	0.152	0.117	0.185	0.116	0.007	-0.116	-0.117	-0.446
195.6	0.112	0.026	0.140	0.107	0.182	0.118	0.015	-0.112	-0.112	-0.447
197.0	0.111	0.018	0.141	0.101	0.170	0.125	0.025	-0.110	-0.107	-0.448
198.4	0.111	0.013	0.134	0.094	0.161	0.130	0.031	-0.104	-0.104	-0.449
199.8	0.110	0.006	0.125	0.085	0.153	0.131	0.037	-0.097	-0.096	-0.449
201.2	0.110	0.000	0.118	0.078	0.144	0.133	0.046	-0.094	-0.094	-0.449
202.6	0.109	-0.001	0.113	0.075	0.134	0.134	0.055	-0.087	-0.089	-0.449
204.0	0.106	-0.005	0.111	0.069	0.124	0.129	0.063	-0.081	-0.086	-0.449
205.4	0.105	-0.013	0.101	0.058	0.114	0.126	0.065	-0.075	-0.080	-0.448
206.8	0.104	-0.014	0.098	0.054	0.101	0.118	0.069	-0.062	-0.070	-0.448
208.3	0.102	-0.023	0.086	0.046	0.087	0.107	0.070	-0.056	-0.069	-0.448
209.7	0.102	-0.027	0.082	0.041	0.075	0.099	0.066	-0.051	-0.063	-0.448
211.1	0.096	-0.026	0.079	0.037	0.065	0.091	0.067	-0.047	-0.059	-0.447
212.5	0.095	-0.030	0.066	0.028	0.052	0.077	0.063	-0.040	-0.049	-0.447
213.9	0.097	-0.032	0.063	0.019	0.040	0.062	0.056	-0.031	-0.037	-0.447
215.3	0.094	-0.038	0.055	0.010	0.027	0.045	0.048	-0.029	-0.035	-0.448
216.7	0.097	-0.047	0.042	0.000	0.014	0.030	0.038	-0.029	-0.029	-0.447
218.1	0.098	-0.051	0.034	-0.010	0.007	0.024	0.033	-0.035	-0.034	-0.446
219.5	0.094	-0.056	0.033	-0.012	0.003	0.016	0.030	-0.025	-0.037	-0.447
220.9	0.090	-0.057	0.026	-0.017	-0.003	0.007	0.026	-0.018	-0.026	-0.447
222.3	0.092	-0.054	0.029	-0.017	-0.003	0.003	0.027	-0.023	-0.022	-0.446
223.7	0.088	-0.057	0.028	-0.018	-0.008	-0.003	0.020	-0.016	-0.022	-0.446
225.1	0.086	-0.053	0.024	-0.020	-0.011	-0.006	0.022	-0.008	-0.013	-0.446
226.5	0.087	-0.056	0.018	-0.020	-0.008	-0.004	0.032	0.001	-0.007	-0.445
227.9	0.087	-0.060	0.018	-0.019	-0.012	-0.006	0.033	0.011	-0.007	-0.445
229.3	0.089	-0.050	0.020	-0.017	-0.015	-0.010	0.030	0.020	0.003	-0.444
230.8	0.092	-0.043	0.025	-0.015	-0.015	-0.012	0.026	0.026	0.012	-0.444
232.2	0.089	-0.044	0.028	-0.012	-0.015	-0.017	0.022	0.028	0.015	-0.443
233.6	0.088	-0.041	0.028	-0.012	-0.013	-0.015	0.021	0.030	0.018	-0.444
235.0	0.088	-0.039	0.029	-0.013	-0.014	-0.014	0.019	0.040	0.025	-0.443
236.4	0.089	-0.041	0.032	-0.010	-0.017	-0.024	0.009	0.042	0.026	-0.442
237.8	0.091	-0.032	0.036	-0.008	-0.015	-0.028	-0.004	0.034	0.021	-0.441
239.2	0.087	-0.025	0.037	-0.006	-0.016	-0.037	-0.011	0.029	0.018	-0.440
240.6	0.084	-0.022	0.039	-0.002	-0.016	-0.041	-0.022	0.020	0.011	-0.439
242.0	0.086	-0.020	0.038	0.005	-0.017	-0.046	-0.031	0.004	-0.003	-0.439
243.4	0.086	-0.014	0.041	0.008	-0.016	-0.053	-0.034	0.000	-0.011	-0.442
244.8	0.088	-0.002	0.052	0.015	-0.013	-0.053	-0.042	-0.005	-0.016	-0.441
246.2	0.089	0.013	0.068	0.028	-0.009	-0.053	-0.050	-0.013	-0.020	-0.441

Table 16. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.086	0.019	0.080	0.042	-0.001	-0.056	-0.057	-0.020	-0.027	-0.440
249.0	0.093	0.024	0.084	0.051	0.005	-0.055	-0.063	-0.035	-0.035	-0.441
250.4	0.097	0.029	0.083	0.053	0.014	-0.053	-0.067	-0.046	-0.046	-0.440
251.8	0.098	0.030	0.087	0.058	0.017	-0.052	-0.070	-0.058	-0.056	-0.439
253.3	0.096	0.037	0.095	0.064	0.019	-0.053	-0.073	-0.066	-0.065	-0.439
254.7	0.091	0.032	0.094	0.064	0.025	-0.052	-0.079	-0.071	-0.072	-0.439
256.1	0.093	0.033	0.098	0.070	0.032	-0.049	-0.081	-0.083	-0.077	-0.439
257.5	0.092	0.040	0.109	0.079	0.040	-0.046	-0.082	-0.094	-0.084	-0.438
258.9	0.088	0.041	0.115	0.084	0.047	-0.043	-0.085	-0.101	-0.092	-0.437
260.3	0.085	0.047	0.114	0.086	0.055	-0.038	-0.084	-0.108	-0.101	-0.437
261.7	0.086	0.050	0.123	0.095	0.065	-0.035	-0.082	-0.114	-0.105	-0.437
263.1	0.080	0.055	0.126	0.102	0.075	-0.026	-0.080	-0.115	-0.108	-0.436
264.5	0.080	0.051	0.126	0.102	0.084	-0.020	-0.078	-0.121	-0.112	-0.436
265.9	0.081	0.053	0.129	0.109	0.103	-0.010	-0.071	-0.127	-0.116	-0.435
267.3	0.077	0.058	0.134	0.120	0.115	0.002	-0.068	-0.131	-0.120	-0.434
268.7	0.075	0.061	0.143	0.127	0.124	0.008	-0.066	-0.129	-0.120	-0.434
270.1	0.075	0.061	0.140	0.130	0.134	0.019	-0.060	-0.135	-0.121	-0.433
271.5	0.075	0.061	0.140	0.131	0.146	0.028	-0.051	-0.138	-0.126	-0.433
272.9	0.075	0.059	0.143	0.131	0.160	0.046	-0.042	-0.137	-0.129	-0.432
274.3	0.072	0.054	0.142	0.131	0.169	0.059	-0.034	-0.134	-0.130	-0.432
275.8	0.072	0.052	0.143	0.132	0.178	0.066	-0.027	-0.133	-0.128	-0.432
277.2	0.070	0.052	0.146	0.134	0.186	0.080	-0.019	-0.134	-0.131	-0.432
278.6	0.066	0.053	0.151	0.134	0.190	0.092	-0.010	-0.132	-0.133	-0.432
280.0	0.061	0.050	0.142	0.128	0.190	0.100	-0.004	-0.130	-0.130	-0.431
281.4	0.059	0.042	0.137	0.122	0.188	0.105	0.004	-0.128	-0.130	-0.431
282.8	0.056	0.038	0.135	0.115	0.188	0.116	0.010	-0.126	-0.129	-0.432
284.2	0.051	0.032	0.129	0.110	0.186	0.124	0.016	-0.124	-0.126	-0.432
285.6	0.048	0.027	0.123	0.103	0.178	0.127	0.026	-0.119	-0.125	-0.433
287.0	0.046	0.020	0.114	0.091	0.164	0.126	0.031	-0.120	-0.123	-0.433
288.4	0.045	0.013	0.102	0.080	0.153	0.120	0.035	-0.114	-0.120	-0.433
289.8	0.041	0.003	0.091	0.070	0.146	0.119	0.041	-0.106	-0.111	-0.433
291.2	0.037	-0.007	0.080	0.061	0.143	0.125	0.049	-0.106	-0.103	-0.434
292.6	0.033	-0.013	0.077	0.056	0.137	0.130	0.064	-0.100	-0.099	-0.434
294.0	0.028	-0.013	0.082	0.051	0.128	0.130	0.071	-0.091	-0.095	-0.435
295.4	0.025	-0.018	0.075	0.044	0.116	0.128	0.076	-0.080	-0.084	-0.437
296.8	0.020	-0.022	0.077	0.035	0.103	0.124	0.082	-0.074	-0.079	-0.436
298.3	0.014	-0.024	0.069	0.026	0.087	0.115	0.085	-0.062	-0.070	-0.437
299.7	0.010	-0.031	0.058	0.017	0.073	0.107	0.082	-0.052	-0.059	-0.436
301.1	0.005	-0.036	0.050	0.008	0.062	0.098	0.084	-0.051	-0.057	-0.436
302.5	0.002	-0.038	0.044	0.002	0.051	0.082	0.082	-0.045	-0.046	-0.435
303.9	0.001	-0.037	0.047	-0.001	0.042	0.071	0.080	-0.038	-0.042	-0.434
305.3	-0.005	-0.046	0.037	-0.013	0.026	0.056	0.071	-0.036	-0.041	-0.434
306.7	-0.005	-0.047	0.033	-0.023	0.017	0.048	0.062	-0.034	-0.036	-0.434
308.1	-0.009	-0.052	0.027	-0.028	0.010	0.041	0.059	-0.032	-0.037	-0.434

Table 16. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	-0.015	-0.059	0.013	-0.040	-0.005	0.027	0.047	-0.026	-0.028	-0.433
310.9	-0.012	-0.059	0.012	-0.046	-0.014	0.014	0.039	-0.031	-0.030	-0.432
312.3	-0.023	-0.062	0.011	-0.047	-0.024	0.005	0.033	-0.032	-0.038	-0.431
313.7	-0.028	-0.064	0.005	-0.049	-0.030	0.006	0.033	-0.029	-0.035	-0.430
315.1	-0.028	-0.069	-0.002	-0.051	-0.031	0.001	0.032	-0.024	-0.038	-0.430
316.5	-0.031	-0.068	-0.004	-0.047	-0.032	-0.003	0.032	-0.015	-0.033	-0.430
317.9	-0.035	-0.062	0.000	-0.041	-0.034	-0.004	0.029	-0.003	-0.022	-0.430
319.3	-0.037	-0.055	0.003	-0.038	-0.036	-0.004	0.031	0.003	-0.011	-0.430
320.8	-0.038	-0.055	-0.004	-0.040	-0.033	-0.002	0.033	0.010	-0.007	-0.430
322.2	-0.038	-0.055	-0.004	-0.038	-0.035	-0.008	0.029	0.020	-0.003	-0.430
323.6	-0.045	-0.053	-0.002	-0.035	-0.038	-0.014	0.022	0.025	0.006	-0.430
325.0	-0.048	-0.050	0.003	-0.033	-0.042	-0.025	0.011	0.022	0.004	-0.429
326.4	-0.048	-0.048	0.000	-0.030	-0.043	-0.030	0.001	0.021	0.005	-0.428
327.8	-0.048	-0.049	-0.001	-0.028	-0.046	-0.039	-0.010	0.019	0.008	-0.428
329.2	-0.048	-0.043	0.001	-0.026	-0.045	-0.042	-0.017	0.007	0.001	-0.427
330.6	-0.044	-0.039	0.007	-0.022	-0.044	-0.049	-0.029	-0.002	-0.008	-0.427
332.0	-0.049	-0.036	0.012	-0.019	-0.044	-0.055	-0.043	-0.014	-0.018	-0.427
333.4	-0.047	-0.027	0.016	-0.013	-0.045	-0.061	-0.053	-0.019	-0.021	-0.427
334.8	-0.047	-0.011	0.022	-0.007	-0.040	-0.067	-0.064	-0.028	-0.027	-0.427
336.2	-0.044	-0.003	0.028	0.003	-0.033	-0.066	-0.070	-0.037	-0.035	-0.427
337.6	-0.037	0.012	0.042	0.018	-0.024	-0.066	-0.075	-0.043	-0.042	-0.427
339.0	-0.036	0.018	0.047	0.024	-0.018	-0.063	-0.076	-0.053	-0.051	-0.427
340.4	-0.033	0.019	0.052	0.027	-0.010	-0.059	-0.081	-0.061	-0.058	-0.427
341.8	-0.027	0.021	0.056	0.034	0.000	-0.056	-0.085	-0.070	-0.063	-0.427
343.3	-0.026	0.022	0.061	0.038	0.001	-0.057	-0.092	-0.077	-0.068	-0.427
344.7	-0.028	0.030	0.065	0.042	0.000	-0.058	-0.098	-0.085	-0.076	-0.427
346.1	-0.026	0.034	0.071	0.047	0.012	-0.052	-0.100	-0.097	-0.083	-0.427
347.5	-0.027	0.035	0.074	0.054	0.022	-0.049	-0.104	-0.100	-0.092	-0.427
348.9	-0.027	0.040	0.085	0.061	0.026	-0.048	-0.104	-0.105	-0.096	-0.427
350.3	-0.027	0.044	0.093	0.065	0.034	-0.048	-0.108	-0.120	-0.105	-0.426
351.7	-0.027	0.042	0.093	0.074	0.042	-0.046	-0.111	-0.127	-0.112	-0.426
353.1	-0.023	0.048	0.104	0.081	0.049	-0.039	-0.108	-0.131	-0.121	-0.426
354.5	-0.023	0.051	0.109	0.083	0.059	-0.033	-0.107	-0.135	-0.128	-0.426
355.9	-0.023	0.053	0.117	0.089	0.071	-0.027	-0.107	-0.138	-0.122	-0.427
357.3	-0.023	0.055	0.119	0.095	0.077	-0.021	-0.103	-0.141	-0.127	-0.427
358.7	-0.021	0.051	0.122	0.097	0.082	-0.011	-0.099	-0.145	-0.136	-0.428

Table 17. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0403$, $\mu = 0.151$, $\alpha_s = -3.0°$, $\theta = 7.7°$, $A_1 = -1.8°$, $B_1 = 2.3°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.326	0.166	0.030	0.080	-0.016	-0.173	-0.302	-0.266	0.132	0.041	-0.018
1.5	0.330	0.172	0.033	0.083	-0.013	-0.172	-0.299	-0.259	0.143	0.052	-0.015
2.9	0.336	0.175	0.039	0.089	-0.009	-0.172	-0.300	-0.252	0.155	0.063	-0.009
4.3	0.340	0.178	0.049	0.099	-0.007	-0.173	-0.294	-0.253	0.174	0.071	-0.004
5.8	0.341	0.186	0.056	0.104	-0.005	-0.172	-0.291	-0.260	0.191	0.081	0.002
7.2	0.345	0.191	0.064	0.114	0.000	-0.174	-0.286	-0.260	0.205	0.091	0.010
8.6	0.350	0.196	0.072	0.117	0.002	-0.177	-0.279	-0.262	0.220	0.104	0.017
10.0	0.355	0.204	0.078	0.122	0.002	-0.179	-0.279	-0.261	0.239	0.117	0.022
11.4	0.362	0.214	0.089	0.136	0.004	-0.180	-0.276	-0.259	0.255	0.130	0.024
12.8	0.372	0.229	0.101	0.146	0.008	-0.180	-0.258	-0.260	0.270	0.146	0.033
14.2	0.383	0.238	0.111	0.153	0.009	-0.184	-0.243	-0.260	0.289	0.162	0.043
15.6	0.391	0.244	0.124	0.163	0.009	-0.186	-0.223	-0.260	0.309	0.172	0.050
17.0	0.394	0.259	0.133	0.171	0.011	-0.185	-0.215	-0.255	0.329	0.187	0.058
18.4	0.408	0.277	0.152	0.188	0.011	-0.188	-0.196	-0.242	0.351	0.208	0.067
19.8	0.424	0.292	0.168	0.200	0.012	-0.192	-0.172	-0.228	0.375	0.227	0.073
21.2	0.435	0.304	0.178	0.204	0.011	-0.193	-0.158	-0.211	0.402	0.245	0.081
22.6	0.444	0.318	0.188	0.215	0.009	-0.187	-0.137	-0.198	0.431	0.255	0.083
24.0	0.455	0.330	0.202	0.224	0.016	-0.185	-0.121	-0.187	0.436	0.258	0.082
25.4	0.469	0.347	0.214	0.233	0.025	-0.185	-0.104	-0.179	0.429	0.259	0.079
26.8	0.480	0.359	0.226	0.247	0.029	-0.185	-0.121	-0.172	0.423	0.249	0.072
28.3	0.485	0.369	0.241	0.264	0.032	-0.187	-0.146	-0.162	0.410	0.241	0.064
29.7	0.494	0.381	0.258	0.277	0.037	-0.187	-0.139	-0.152	0.407	0.241	0.058
31.1	0.502	0.391	0.276	0.290	0.038	-0.188	-0.142	-0.147	0.399	0.236	0.054
32.5	0.508	0.407	0.289	0.298	0.040	-0.188	-0.155	-0.146	0.379	0.215	0.045
33.9	0.513	0.415	0.293	0.305	0.042	-0.186	-0.153	-0.142	0.348	0.169	0.040
35.3	0.519	0.416	0.293	0.305	0.041	-0.186	-0.153	-0.133	0.313	0.142	0.055
36.7	0.525	0.418	0.296	0.306	0.040	-0.182	-0.173	-0.124	0.293	0.159	0.038
38.1	0.522	0.418	0.295	0.304	0.037	-0.183	-0.199	-0.119	0.275	0.131	0.010
39.5	0.519	0.413	0.287	0.297	0.034	-0.182	-0.222	-0.121	0.266	0.117	0.040
40.9	0.516	0.403	0.275	0.292	0.039	-0.178	-0.232	-0.128	0.239	0.101	0.021
42.3	0.507	0.393	0.264	0.283	0.042	-0.178	-0.230	-0.129	0.230	0.045	-0.016
43.7	0.499	0.382	0.255	0.271	0.036	-0.177	-0.238	-0.125	0.228	0.037	-0.056
45.1	0.491	0.370	0.245	0.264	0.032	-0.169	-0.254	-0.121	0.209	0.025	-0.062
46.5	0.477	0.358	0.234	0.257	0.028	-0.170	-0.273	-0.120	0.196	0.045	-0.041
47.9	0.463	0.343	0.221	0.245	0.028	-0.177	-0.274	-0.131	0.183	0.098	-0.018
49.3	0.451	0.325	0.202	0.230	0.026	-0.175	-0.265	-0.139	0.175	0.115	0.019
50.8	0.438	0.309	0.184	0.216	0.017	-0.172	-0.266	-0.135	0.184	0.104	0.021
52.2	0.425	0.293	0.168	0.202	0.015	-0.170	-0.285	-0.133	0.194	0.067	0.012
53.6	0.415	0.279	0.154	0.189	0.013	-0.172	-0.310	-0.136	0.172	0.037	0.007
55.0	0.404	0.265	0.140	0.180	0.008	-0.175	-0.341	-0.137	0.141	0.036	-0.008
56.4	0.392	0.250	0.126	0.169	0.005	-0.175	-0.336	-0.146	0.128	0.025	-0.015
57.8	0.382	0.239	0.116	0.158	0.001	-0.179	-0.333	-0.158	0.107	0.007	-0.029
59.2	0.371	0.227	0.103	0.147	-0.003	-0.180	-0.344	-0.173	0.102	0.012	-0.037
60.6	0.363	0.218	0.091	0.134	-0.008	-0.182	-0.357	-0.193	0.099	0.020	-0.042

Table 17. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.355	0.207	0.080	0.127	-0.012	-0.190	-0.371	-0.219	0.093	0.014	-0.039
63.4	0.345	0.196	0.069	0.118	-0.018	-0.193	-0.374	-0.235	0.086	0.007	-0.038
64.8	0.340	0.188	0.061	0.107	-0.022	-0.196	-0.397	-0.245	0.065	0.001	-0.040
66.2	0.335	0.181	0.052	0.098	-0.026	-0.196	-0.406	-0.260	0.044	-0.004	-0.039
67.6	0.330	0.175	0.043	0.090	-0.031	-0.195	-0.405	-0.281	0.043	-0.006	-0.039
69.0	0.325	0.167	0.035	0.083	-0.032	-0.197	-0.406	-0.293	0.050	-0.008	-0.041
70.4	0.320	0.162	0.028	0.076	-0.029	-0.201	-0.403	-0.296	0.046	-0.014	-0.048
71.8	0.315	0.155	0.022	0.072	-0.033	-0.201	-0.395	-0.300	0.036	-0.016	-0.050
73.3	0.309	0.151	0.018	0.069	-0.036	-0.200	-0.383	-0.301	0.041	-0.022	-0.049
74.7	0.308	0.149	0.016	0.066	-0.037	-0.205	-0.384	-0.302	0.045	-0.024	-0.050
76.1	0.306	0.148	0.014	0.065	-0.039	-0.212	-0.381	-0.302	0.046	-0.017	-0.047
77.5	0.304	0.145	0.013	0.062	-0.040	-0.213	-0.391	-0.303	0.055	-0.012	-0.047
78.9	0.302	0.143	0.011	0.059	-0.041	-0.213	-0.399	-0.310	0.057	-0.011	-0.045
80.3	0.300	0.141	0.009	0.058	-0.041	-0.214	-0.396	-0.319	0.069	-0.007	-0.044
81.7	0.300	0.138	0.007	0.055	-0.043	-0.215	-0.372	-0.328	0.079	-0.001	-0.045
83.1	0.298	0.138	0.004	0.055	-0.044	-0.216	-0.355	-0.330	0.081	0.004	-0.043
84.5	0.298	0.137	0.005	0.057	-0.043	-0.215	-0.363	-0.326	0.086	0.008	-0.037
85.9	0.297	0.137	0.007	0.058	-0.039	-0.217	-0.356	-0.326	0.087	0.014	-0.034
87.3	0.295	0.138	0.010	0.059	-0.039	-0.222	-0.341	-0.325	0.092	0.023	-0.029
88.7	0.296	0.140	0.010	0.059	-0.040	-0.225	-0.322	-0.323	0.106	0.026	-0.023
90.1	0.299	0.144	0.011	0.063	-0.040	-0.220	-0.328	-0.321	0.121	0.033	-0.023
91.5	0.305	0.147	0.016	0.066	-0.038	-0.219	-0.318	-0.316	0.131	0.043	-0.019
92.9	0.310	0.151	0.023	0.073	-0.035	-0.220	-0.309	-0.318	0.138	0.053	-0.014
94.3	0.313	0.156	0.031	0.079	-0.036	-0.218	-0.303	-0.312	0.154	0.062	-0.006
95.8	0.316	0.164	0.037	0.085	-0.034	-0.216	-0.293	-0.308	0.168	0.071	0.004
97.2	0.321	0.171	0.041	0.089	-0.030	-0.213	-0.290	-0.306	0.178	0.085	0.007
98.6	0.327	0.173	0.045	0.090	-0.025	-0.211	-0.283	-0.300	0.201	0.100	0.012
100.0	0.330	0.181	0.050	0.094	-0.023	-0.208	-0.283	-0.291	0.221	0.111	0.019
101.4	0.338	0.189	0.056	0.102	-0.023	-0.206	-0.276	-0.286	0.236	0.125	0.020
102.8	0.345	0.196	0.066	0.112	-0.017	-0.204	-0.257	-0.282	0.256	0.139	0.029
104.2	0.351	0.204	0.080	0.123	-0.014	-0.203	-0.236	-0.278	0.277	0.154	0.039
105.6	0.359	0.214	0.090	0.133	-0.016	-0.203	-0.218	-0.275	0.295	0.171	0.042
107.0	0.365	0.223	0.099	0.137	-0.015	-0.207	-0.196	-0.269	0.317	0.187	0.053
108.4	0.373	0.237	0.109	0.146	-0.016	-0.212	-0.178	-0.258	0.346	0.205	0.063
109.8	0.385	0.250	0.117	0.151	-0.018	-0.213	-0.169	-0.245	0.370	0.225	0.069
111.2	0.394	0.257	0.124	0.155	-0.020	-0.214	-0.160	-0.231	0.392	0.238	0.074
112.6	0.400	0.263	0.126	0.159	-0.018	-0.209	-0.144	-0.215	0.414	0.252	0.078
114.0	0.407	0.272	0.137	0.167	-0.017	-0.207	-0.138	-0.201	0.420	0.261	0.078
115.4	0.414	0.278	0.147	0.173	-0.014	-0.204	-0.145	-0.189	0.419	0.254	0.078
116.8	0.416	0.286	0.152	0.179	-0.010	-0.198	-0.147	-0.181	0.408	0.249	0.074
118.3	0.419	0.292	0.165	0.192	-0.006	-0.196	-0.148	-0.177	0.399	0.240	0.067
119.7	0.421	0.296	0.177	0.204	0.000	-0.197	-0.148	-0.178	0.369	0.225	0.063
121.1	0.420	0.302	0.189	0.213	0.004	-0.199	-0.158	-0.173	0.359	0.212	0.050
122.5	0.424	0.308	0.195	0.220	0.006	-0.198	-0.187	-0.167	0.362	0.197	0.036

Table 17. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.428	0.314	0.196	0.220	0.005	-0.198	-0.197	-0.166	0.338	0.182	0.032
125.3	0.433	0.315	0.201	0.223	0.003	-0.199	-0.188	-0.166	0.313	0.187	0.042
126.7	0.434	0.314	0.204	0.230	0.000	-0.200	-0.190	-0.162	0.289	0.169	0.047
128.1	0.435	0.323	0.208	0.231	-0.002	-0.197	-0.205	-0.149	0.272	0.149	0.045
129.5	0.442	0.325	0.205	0.227	0.001	-0.195	-0.235	-0.140	0.237	0.135	0.016
130.9	0.442	0.317	0.199	0.222	0.000	-0.197	-0.252	-0.141	0.217	0.070	0.008
132.3	0.436	0.317	0.192	0.217	0.000	-0.195	-0.258	-0.148	0.211	0.053	-0.006
133.7	0.436	0.313	0.186	0.210	0.001	-0.189	-0.268	-0.149	0.189	0.038	-0.028
135.1	0.433	0.305	0.179	0.205	-0.002	-0.184	-0.284	-0.151	0.153	0.025	-0.043
136.5	0.425	0.297	0.169	0.196	-0.002	-0.182	-0.293	-0.157	0.153	0.032	-0.046
137.9	0.416	0.282	0.160	0.189	-0.004	-0.184	-0.291	-0.155	0.156	0.079	-0.038
139.3	0.403	0.273	0.153	0.186	-0.005	-0.186	-0.290	-0.147	0.170	0.125	-0.011
140.8	0.397	0.266	0.142	0.177	-0.001	-0.182	-0.307	-0.146	0.182	0.097	0.038
142.2	0.392	0.255	0.132	0.166	-0.002	-0.177	-0.317	-0.155	0.165	0.076	0.035
143.6	0.383	0.243	0.119	0.158	-0.005	-0.171	-0.318	-0.159	0.146	0.064	0.008
145.0	0.374	0.231	0.108	0.150	-0.007	-0.169	-0.325	-0.153	0.121	0.024	-0.015
146.4	0.365	0.220	0.100	0.146	-0.006	-0.173	-0.332	-0.153	0.111	0.023	-0.023
147.8	0.357	0.213	0.092	0.135	-0.005	-0.172	-0.334	-0.162	0.092	0.026	-0.023
149.2	0.352	0.204	0.081	0.124	-0.008	-0.172	-0.354	-0.180	0.083	0.024	-0.035
150.6	0.344	0.196	0.071	0.118	-0.012	-0.172	-0.354	-0.193	0.086	0.018	-0.027
152.0	0.337	0.188	0.061	0.109	-0.012	-0.174	-0.363	-0.203	0.075	0.006	-0.026
153.4	0.331	0.177	0.052	0.101	-0.012	-0.177	-0.377	-0.223	0.069	0.000	-0.029
154.8	0.323	0.169	0.045	0.092	-0.014	-0.176	-0.380	-0.245	0.062	-0.006	-0.036
156.2	0.318	0.165	0.038	0.087	-0.015	-0.171	-0.394	-0.262	0.066	-0.002	-0.038
157.6	0.315	0.159	0.034	0.085	-0.012	-0.171	-0.400	-0.266	0.069	0.000	-0.033
159.0	0.311	0.154	0.029	0.079	-0.010	-0.174	-0.416	-0.270	0.055	-0.004	-0.038
160.4	0.307	0.149	0.024	0.075	-0.011	-0.175	-0.417	-0.281	0.056	-0.007	-0.037
161.8	0.303	0.145	0.018	0.070	-0.010	-0.172	-0.387	-0.287	0.060	-0.007	-0.034
163.3	0.302	0.141	0.015	0.068	-0.012	-0.175	-0.387	-0.289	0.062	-0.006	-0.038
164.7	0.299	0.138	0.014	0.067	-0.014	-0.182	-0.394	-0.287	0.065	-0.011	-0.040
166.1	0.297	0.138	0.012	0.064	-0.015	-0.182	-0.382	-0.288	0.067	-0.012	-0.038
167.5	0.296	0.138	0.009	0.062	-0.015	-0.183	-0.381	-0.288	0.071	-0.004	-0.035
168.9	0.295	0.135	0.007	0.058	-0.015	-0.184	-0.362	-0.279	0.078	0.003	-0.034
170.3	0.295	0.133	0.007	0.058	-0.018	-0.183	-0.345	-0.276	0.084	0.003	-0.033
171.7	0.293	0.133	0.005	0.057	-0.019	-0.183	-0.353	-0.286	0.090	0.002	-0.030
173.1	0.292	0.134	0.004	0.057	-0.019	-0.183	-0.367	-0.297	0.096	0.007	-0.030
174.5	0.294	0.131	0.004	0.055	-0.019	-0.185	-0.359	-0.298	0.099	0.011	-0.025
175.9	0.293	0.130	0.005	0.053	-0.017	-0.186	-0.341	-0.299	0.107	0.025	-0.023
177.3	0.291	0.131	0.002	0.056	-0.019	-0.189	-0.326	-0.299	0.112	0.031	-0.018
178.7	0.292	0.133	0.005	0.055	-0.022	-0.190	-0.322	-0.296	0.121	0.033	-0.009
180.1	0.294	0.136	0.006	0.056	-0.022	-0.194	-0.325	-0.298	0.136	0.041	-0.010
181.5	0.300	0.139	0.008	0.060	-0.024	-0.193	-0.324	-0.295	0.154	0.049	-0.008
182.9	0.303	0.142	0.013	0.062	-0.023	-0.193	-0.322	-0.295	0.168	0.059	-0.002
184.3	0.305	0.147	0.017	0.066	-0.020	-0.193	-0.318	-0.290	0.178	0.068	0.003

Table 17. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.308	0.149	0.022	0.070	-0.015	-0.192	-0.303	-0.282	0.196	0.081	0.010
187.2	0.309	0.154	0.027	0.074	-0.016	-0.194	-0.276	-0.280	0.221	0.095	0.018
188.6	0.313	0.160	0.031	0.079	-0.017	-0.194	-0.264	-0.276	0.240	0.105	0.025
190.0	0.319	0.166	0.039	0.086	-0.013	-0.193	-0.252	-0.271	0.261	0.123	0.029
191.4	0.324	0.173	0.046	0.091	-0.013	-0.195	-0.249	-0.263	0.286	0.142	0.038
192.8	0.330	0.180	0.054	0.097	-0.012	-0.194	-0.242	-0.259	0.311	0.156	0.045
194.2	0.337	0.190	0.064	0.106	-0.010	-0.193	-0.219	-0.258	0.331	0.174	0.056
195.6	0.345	0.201	0.073	0.116	-0.007	-0.191	-0.189	-0.254	0.351	0.199	0.070
197.0	0.356	0.211	0.084	0.122	-0.006	-0.191	-0.175	-0.248	0.378	0.223	0.081
198.4	0.364	0.221	0.093	0.129	-0.009	-0.197	-0.152	-0.238	0.407	0.246	0.091
199.8	0.369	0.230	0.103	0.138	-0.011	-0.199	-0.133	-0.224	0.436	0.273	0.105
201.2	0.376	0.240	0.110	0.144	-0.015	-0.197	-0.127	-0.207	0.467	0.298	0.115
202.6	0.385	0.250	0.121	0.149	-0.015	-0.194	-0.118	-0.193	0.491	0.318	0.122
204.0	0.394	0.258	0.129	0.153	-0.014	-0.191	-0.101	-0.177	0.508	0.330	0.126
205.4	0.398	0.266	0.135	0.160	-0.012	-0.190	-0.080	-0.159	0.513	0.339	0.128
206.8	0.402	0.275	0.143	0.168	-0.007	-0.186	-0.077	-0.146	0.506	0.335	0.129
208.3	0.407	0.279	0.150	0.173	-0.005	-0.183	-0.100	-0.131	0.493	0.328	0.126
209.7	0.406	0.280	0.156	0.179	-0.005	-0.183	-0.114	-0.124	0.485	0.322	0.124
211.1	0.405	0.282	0.163	0.186	-0.007	-0.184	-0.130	-0.121	0.474	0.306	0.116
212.5	0.404	0.287	0.171	0.192	-0.006	-0.184	-0.144	-0.126	0.448	0.296	0.109
213.9	0.407	0.290	0.175	0.196	-0.005	-0.184	-0.134	-0.136	0.427	0.277	0.106
215.3	0.407	0.288	0.175	0.196	-0.009	-0.185	-0.137	-0.127	0.393	0.246	0.097
216.7	0.407	0.289	0.170	0.191	-0.015	-0.190	-0.152	-0.117	0.370	0.231	0.096
218.1	0.408	0.286	0.166	0.190	-0.020	-0.192	-0.182	-0.109	0.352	0.203	0.103
219.5	0.405	0.280	0.160	0.185	-0.022	-0.197	-0.201	-0.103	0.326	0.160	0.047
220.9	0.403	0.276	0.154	0.177	-0.025	-0.199	-0.226	-0.111	0.307	0.116	-0.007
222.3	0.399	0.269	0.147	0.172	-0.029	-0.195	-0.243	-0.118	0.303	0.087	0.006
223.7	0.395	0.264	0.137	0.164	-0.028	-0.191	-0.252	-0.122	0.268	0.077	-0.020
225.1	0.390	0.258	0.128	0.157	-0.031	-0.192	-0.260	-0.121	0.223	0.090	-0.025
226.5	0.383	0.244	0.122	0.150	-0.031	-0.193	-0.264	-0.113	0.208	0.122	-0.014
227.9	0.373	0.237	0.110	0.141	-0.035	-0.190	-0.269	-0.109	0.249	0.138	0.013
229.3	0.367	0.228	0.098	0.131	-0.035	-0.187	-0.279	-0.106	0.256	0.138	0.041
230.8	0.360	0.216	0.089	0.125	-0.031	-0.188	-0.301	-0.110	0.218	0.115	0.031
232.2	0.352	0.207	0.081	0.119	-0.034	-0.190	-0.319	-0.120	0.218	0.082	0.015
233.6	0.346	0.197	0.071	0.111	-0.036	-0.185	-0.329	-0.126	0.199	0.066	0.010
235.0	0.338	0.192	0.062	0.106	-0.035	-0.181	-0.333	-0.133	0.163	0.052	-0.004
236.4	0.335	0.184	0.058	0.103	-0.033	-0.183	-0.325	-0.136	0.138	0.041	-0.023
237.8	0.330	0.176	0.052	0.095	-0.034	-0.185	-0.326	-0.135	0.123	0.033	-0.032
239.2	0.326	0.172	0.045	0.090	-0.035	-0.180	-0.340	-0.145	0.116	0.036	-0.021
240.6	0.321	0.166	0.037	0.083	-0.035	-0.181	-0.362	-0.162	0.101	0.030	-0.021
242.0	0.315	0.160	0.029	0.075	-0.035	-0.186	-0.381	-0.183	0.089	0.016	-0.026
243.4	0.308	0.151	0.022	0.071	-0.033	-0.188	-0.389	-0.203	0.083	0.010	-0.026
244.8	0.303	0.146	0.017	0.067	-0.036	-0.187	-0.394	-0.210	0.077	0.007	-0.030
246.2	0.301	0.142	0.014	0.064	-0.037	-0.185	-0.389	-0.213	0.078	0.010	-0.038

Table 17. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.299	0.138	0.010	0.059	-0.036	-0.183	-0.374	-0.224	0.079	0.010	-0.043
249.0	0.296	0.134	0.005	0.054	-0.036	-0.184	-0.383	-0.248	0.073	0.009	-0.042
250.4	0.293	0.131	0.001	0.050	-0.037	-0.182	-0.389	-0.267	0.071	0.008	-0.044
251.8	0.291	0.127	-0.005	0.046	-0.033	-0.183	-0.372	-0.268	0.059	0.002	-0.045
253.3	0.289	0.123	-0.007	0.043	-0.033	-0.193	-0.373	-0.268	0.056	-0.002	-0.043
254.7	0.285	0.122	-0.010	0.044	-0.041	-0.193	-0.377	-0.271	0.061	-0.008	-0.048
256.1	0.283	0.122	-0.010	0.042	-0.044	-0.192	-0.393	-0.277	0.075	-0.011	-0.052
257.5	0.284	0.120	-0.011	0.039	-0.044	-0.196	-0.402	-0.282	0.081	-0.009	-0.053
258.9	0.283	0.118	-0.014	0.038	-0.044	-0.198	-0.386	-0.276	0.077	-0.001	-0.051
260.3	0.281	0.117	-0.014	0.035	-0.044	-0.201	-0.369	-0.278	0.075	0.007	-0.049
261.7	0.281	0.117	-0.016	0.035	-0.047	-0.201	-0.351	-0.291	0.075	0.007	-0.053
263.1	0.282	0.117	-0.016	0.035	-0.047	-0.203	-0.347	-0.297	0.081	0.008	-0.049
264.5	0.282	0.117	-0.016	0.031	-0.047	-0.205	-0.350	-0.298	0.082	0.011	-0.043
265.9	0.281	0.115	-0.020	0.032	-0.046	-0.204	-0.344	-0.300	0.086	0.017	-0.042
267.3	0.280	0.115	-0.019	0.035	-0.046	-0.207	-0.340	-0.303	0.094	0.024	-0.041
268.7	0.280	0.116	-0.015	0.035	-0.047	-0.210	-0.324	-0.303	0.104	0.026	-0.038
270.1	0.282	0.119	-0.015	0.035	-0.047	-0.213	-0.321	-0.297	0.115	0.029	-0.031
271.5	0.287	0.123	-0.012	0.038	-0.049	-0.211	-0.324	-0.299	0.124	0.034	-0.028
272.9	0.289	0.128	-0.007	0.045	-0.045	-0.211	-0.309	-0.304	0.139	0.042	-0.026
274.3	0.294	0.131	0.001	0.050	-0.039	-0.208	-0.305	-0.301	0.160	0.056	-0.022
275.8	0.296	0.134	0.009	0.060	-0.037	-0.209	-0.299	-0.294	0.179	0.062	-0.018
277.2	0.299	0.142	0.016	0.065	-0.036	-0.210	-0.297	-0.288	0.193	0.075	-0.012
278.6	0.304	0.150	0.024	0.069	-0.032	-0.205	-0.285	-0.285	0.208	0.090	-0.004
280.0	0.312	0.156	0.029	0.075	-0.029	-0.202	-0.279	-0.280	0.229	0.105	0.000
281.4	0.319	0.164	0.037	0.082	-0.030	-0.201	-0.279	-0.274	0.250	0.123	0.001
282.8	0.326	0.175	0.046	0.088	-0.027	-0.201	-0.270	-0.259	0.270	0.131	0.007
284.2	0.336	0.184	0.054	0.099	-0.023	-0.196	-0.243	-0.250	0.284	0.143	0.014
285.6	0.345	0.195	0.069	0.111	-0.019	-0.191	-0.208	-0.251	0.300	0.160	0.023
287.0	0.353	0.208	0.082	0.120	-0.018	-0.194	-0.181	-0.247	0.321	0.175	0.036
288.4	0.364	0.221	0.094	0.131	-0.016	-0.196	-0.157	-0.231	0.351	0.197	0.044
289.8	0.375	0.234	0.106	0.142	-0.018	-0.197	-0.151	-0.218	0.387	0.216	0.050
291.2	0.385	0.248	0.119	0.148	-0.018	-0.198	-0.148	-0.207	0.405	0.231	0.059
292.6	0.399	0.263	0.130	0.156	-0.017	-0.197	-0.131	-0.195	0.421	0.246	0.065
294.0	0.412	0.274	0.139	0.167	-0.013	-0.195	-0.126	-0.185	0.433	0.259	0.065
295.4	0.418	0.285	0.153	0.177	-0.007	-0.194	-0.134	-0.173	0.429	0.261	0.066
296.8	0.426	0.295	0.163	0.188	-0.009	-0.192	-0.132	-0.169	0.414	0.250	0.064
298.3	0.432	0.302	0.172	0.197	-0.006	-0.192	-0.161	-0.168	0.386	0.237	0.054
299.7	0.433	0.309	0.186	0.208	-0.003	-0.188	-0.166	-0.166	0.365	0.215	0.045
301.1	0.436	0.317	0.198	0.218	0.001	-0.186	-0.144	-0.165	0.358	0.201	0.042
302.5	0.439	0.323	0.208	0.224	0.005	-0.188	-0.149	-0.152	0.372	0.197	0.038
303.9	0.441	0.328	0.210	0.228	0.006	-0.186	-0.155	-0.138	0.395	0.202	0.019
305.3	0.444	0.329	0.210	0.230	0.005	-0.184	-0.149	-0.130	0.399	0.200	0.017
306.7	0.446	0.330	0.212	0.234	0.003	-0.187	-0.180	-0.118	0.331	0.177	0.041
308.1	0.448	0.330	0.214	0.232	0.001	-0.188	-0.188	-0.110	0.261	0.131	0.033

Table 17. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.448	0.327	0.209	0.230	0.000	-0.183	-0.183	-0.107	0.252	0.076	-0.018
310.9	0.446	0.328	0.203	0.225	-0.001	-0.179	-0.215	-0.103	0.231	0.040	-0.030
312.3	0.446	0.324	0.201	0.223	0.000	-0.179	-0.229	-0.116	0.193	0.018	-0.029
313.7	0.443	0.316	0.195	0.220	0.003	-0.179	-0.237	-0.134	0.152	0.043	-0.044
315.1	0.437	0.310	0.186	0.209	0.003	-0.178	-0.253	-0.136	0.129	0.060	-0.034
316.5	0.429	0.301	0.175	0.205	0.002	-0.174	-0.275	-0.125	0.156	0.055	-0.037
317.9	0.420	0.289	0.168	0.199	0.002	-0.172	-0.296	-0.119	0.187	0.075	-0.019
319.3	0.410	0.279	0.160	0.192	-0.001	-0.172	-0.295	-0.132	0.207	0.080	0.011
320.8	0.405	0.268	0.150	0.185	-0.002	-0.171	-0.298	-0.145	0.192	0.079	0.009
322.2	0.397	0.259	0.139	0.176	-0.002	-0.167	-0.315	-0.150	0.177	0.075	-0.002
323.6	0.389	0.249	0.127	0.166	-0.002	-0.163	-0.310	-0.149	0.153	0.048	0.001
325.0	0.382	0.240	0.117	0.156	-0.001	-0.161	-0.298	-0.142	0.132	0.032	-0.017
326.4	0.377	0.231	0.105	0.147	-0.003	-0.163	-0.310	-0.144	0.123	0.024	-0.015
327.8	0.371	0.220	0.093	0.140	-0.007	-0.167	-0.310	-0.142	0.106	0.018	-0.025
329.2	0.363	0.213	0.087	0.133	-0.007	-0.166	-0.314	-0.145	0.105	0.015	-0.026
330.6	0.357	0.203	0.078	0.123	-0.007	-0.164	-0.326	-0.168	0.097	0.013	-0.026
332.0	0.348	0.195	0.068	0.116	-0.012	-0.165	-0.341	-0.190	0.092	0.003	-0.033
333.4	0.340	0.187	0.061	0.108	-0.016	-0.165	-0.347	-0.190	0.090	0.001	-0.031
334.8	0.335	0.179	0.053	0.101	-0.015	-0.167	-0.358	-0.199	0.085	0.005	-0.033
336.2	0.332	0.175	0.045	0.095	-0.014	-0.168	-0.372	-0.214	0.084	-0.001	-0.034
337.6	0.329	0.169	0.039	0.089	-0.016	-0.161	-0.384	-0.223	0.077	-0.006	-0.038
339.0	0.324	0.164	0.034	0.084	-0.014	-0.158	-0.375	-0.242	0.069	-0.004	-0.034
340.4	0.321	0.159	0.027	0.079	-0.012	-0.163	-0.368	-0.255	0.066	-0.005	-0.034
341.8	0.317	0.152	0.022	0.077	-0.010	-0.164	-0.365	-0.261	0.061	-0.008	-0.042
343.3	0.312	0.149	0.020	0.075	-0.014	-0.163	-0.361	-0.262	0.049	-0.011	-0.043
344.7	0.309	0.147	0.017	0.075	-0.017	-0.165	-0.350	-0.262	0.055	-0.011	-0.045
346.1	0.308	0.145	0.019	0.073	-0.016	-0.166	-0.348	-0.266	0.064	-0.010	-0.045
347.5	0.307	0.145	0.020	0.073	-0.014	-0.169	-0.355	-0.276	0.062	-0.005	-0.044
348.9	0.307	0.147	0.020	0.073	-0.014	-0.173	-0.341	-0.273	0.064	-0.004	-0.042
350.3	0.307	0.149	0.019	0.073	-0.015	-0.173	-0.343	-0.270	0.066	-0.004	-0.039
351.7	0.309	0.150	0.021	0.073	-0.015	-0.175	-0.338	-0.268	0.080	0.001	-0.041
353.1	0.313	0.150	0.021	0.071	-0.016	-0.178	-0.337	-0.263	0.093	0.010	-0.035
354.5	0.314	0.152	0.019	0.072	-0.017	-0.175	-0.337	-0.262	0.096	0.014	-0.030
355.9	0.316	0.154	0.024	0.075	-0.018	-0.172	-0.340	-0.266	0.102	0.019	-0.031
357.3	0.318	0.158	0.026	0.076	-0.016	-0.172	-0.331	-0.267	0.107	0.022	-0.025
358.7	0.322	0.163	0.029	0.078	-0.016	-0.172	-0.310	-0.265	0.120	0.027	-0.023

Table 18. Modified unsteady pressure coefficients around the body at x/l = 0.90. $C_T/\sigma = 0.0403$, $\mu = 0.151$, α_s = -3.0°, $\theta = 7.7°$, $A_1 = -1.8°$, $B_1 = 2.3°$.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.022	-0.064	-0.116	-0.186	-0.236	-0.302	-0.351	-0.268	-0.163	-0.139
1.5	0.019	-0.066	-0.115	-0.185	-0.237	-0.299	-0.343	-0.260	-0.158	-0.139
2.9	0.018	-0.065	-0.113	-0.184	-0.231	-0.300	-0.339	-0.254	-0.152	-0.138
4.3	0.025	-0.066	-0.112	-0.181	-0.227	-0.294	-0.334	-0.256	-0.153	-0.139
5.8	0.024	-0.067	-0.115	-0.183	-0.223	-0.291	-0.332	-0.263	-0.158	-0.139
7.2	0.024	-0.063	-0.112	-0.179	-0.218	-0.286	-0.330	-0.265	-0.161	-0.138
8.6	0.028	-0.065	-0.109	-0.179	-0.218	-0.279	-0.324	-0.263	-0.163	-0.138
10.0	0.032	-0.064	-0.114	-0.182	-0.213	-0.279	-0.322	-0.266	-0.167	-0.137
11.4	0.035	-0.067	-0.117	-0.182	-0.203	-0.276	-0.318	-0.266	-0.171	-0.137
12.8	0.034	-0.070	-0.117	-0.180	-0.197	-0.258	-0.312	-0.265	-0.168	-0.137
14.2	0.031	-0.071	-0.115	-0.179	-0.191	-0.243	-0.305	-0.267	-0.167	-0.137
15.6	0.031	-0.065	-0.113	-0.178	-0.170	-0.223	-0.285	-0.269	-0.173	-0.138
17.0	0.027	-0.062	-0.110	-0.172	-0.154	-0.215	-0.269	-0.264	-0.177	-0.139
18.4	0.031	-0.060	-0.103	-0.169	-0.150	-0.196	-0.249	-0.251	-0.168	-0.139
19.8	0.035	-0.060	-0.098	-0.160	-0.130	-0.172	-0.221	-0.237	-0.156	-0.139
21.2	0.032	-0.056	-0.092	-0.154	-0.121	-0.158	-0.204	-0.223	-0.149	-0.139
22.6	0.033	-0.050	-0.087	-0.151	-0.120	-0.137	-0.188	-0.213	-0.138	-0.140
24.0	0.032	-0.051	-0.090	-0.151	-0.118	-0.121	-0.174	-0.201	-0.130	-0.141
25.4	0.033	-0.056	-0.093	-0.156	-0.119	-0.104	-0.164	-0.193	-0.123	-0.141
26.8	0.032	-0.058	-0.095	-0.159	-0.125	-0.121	-0.153	-0.189	-0.116	-0.140
28.3	0.029	-0.059	-0.103	-0.167	-0.137	-0.146	-0.152	-0.178	-0.109	-0.140
29.7	0.032	-0.070	-0.118	-0.179	-0.144	-0.139	-0.153	-0.171	-0.106	-0.140
31.1	0.034	-0.083	-0.125	-0.185	-0.156	-0.142	-0.151	-0.172	-0.105	-0.139
32.5	0.028	-0.088	-0.129	-0.193	-0.158	-0.155	-0.154	-0.168	-0.097	-0.138
33.9	0.028	-0.090	-0.132	-0.197	-0.160	-0.153	-0.148	-0.160	-0.092	-0.137
35.3	0.029	-0.093	-0.133	-0.198	-0.169	-0.153	-0.147	-0.154	-0.089	-0.136
36.7	0.026	-0.087	-0.130	-0.197	-0.180	-0.173	-0.153	-0.140	-0.079	-0.134
38.1	0.026	-0.088	-0.136	-0.199	-0.200	-0.199	-0.172	-0.134	-0.070	-0.134
39.5	0.024	-0.097	-0.150	-0.213	-0.212	-0.222	-0.185	-0.140	-0.073	-0.135
40.9	0.023	-0.108	-0.161	-0.231	-0.217	-0.232	-0.186	-0.154	-0.086	-0.135
42.3	0.025	-0.119	-0.166	-0.235	-0.221	-0.230	-0.200	-0.153	-0.095	-0.135
43.7	0.020	-0.115	-0.159	-0.229	-0.230	-0.238	-0.212	-0.137	-0.079	-0.135
45.1	0.017	-0.110	-0.158	-0.227	-0.238	-0.254	-0.224	-0.133	-0.071	-0.134
46.5	0.017	-0.111	-0.158	-0.225	-0.244	-0.273	-0.240	-0.130	-0.067	-0.134
47.9	0.010	-0.107	-0.161	-0.229	-0.255	-0.274	-0.247	-0.149	-0.070	-0.134
49.3	0.011	-0.113	-0.168	-0.239	-0.255	-0.265	-0.253	-0.158	-0.085	-0.134
50.8	0.013	-0.118	-0.168	-0.238	-0.257	-0.266	-0.266	-0.145	-0.085	-0.135
52.2	0.013	-0.115	-0.164	-0.233	-0.269	-0.285	-0.279	-0.148	-0.077	-0.134
53.6	0.015	-0.111	-0.163	-0.234	-0.273	-0.310	-0.285	-0.143	-0.077	-0.135
55.0	0.012	-0.109	-0.164	-0.233	-0.269	-0.341	-0.302	-0.137	-0.072	-0.136
56.4	0.011	-0.110	-0.164	-0.235	-0.277	-0.336	-0.316	-0.157	-0.075	-0.136
57.8	0.011	-0.110	-0.167	-0.234	-0.288	-0.333	-0.329	-0.165	-0.079	-0.136
59.2	0.012	-0.108	-0.160	-0.235	-0.289	-0.344	-0.347	-0.172	-0.085	-0.137
60.6	0.011	-0.103	-0.162	-0.235	-0.295	-0.357	-0.369	-0.189	-0.096	-0.137

Table 18. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.009	-0.103	-0.168	-0.239	-0.302	-0.371	-0.380	-0.220	-0.119	-0.137
63.4	0.010	-0.109	-0.171	-0.246	-0.308	-0.374	-0.387	-0.232	-0.141	-0.136
64.8	0.010	-0.113	-0.175	-0.250	-0.312	-0.397	-0.407	-0.237	-0.146	-0.136
66.2	0.009	-0.119	-0.175	-0.248	-0.319	-0.406	-0.417	-0.257	-0.154	-0.137
67.6	0.008	-0.112	-0.173	-0.244	-0.319	-0.405	-0.423	-0.282	-0.175	-0.139
69.0	0.012	-0.111	-0.166	-0.239	-0.318	-0.406	-0.425	-0.292	-0.197	-0.141
70.4	0.011	-0.111	-0.166	-0.237	-0.315	-0.403	-0.431	-0.293	-0.194	-0.142
71.8	0.008	-0.104	-0.163	-0.235	-0.306	-0.395	-0.430	-0.298	-0.193	-0.143
73.3	0.007	-0.103	-0.158	-0.236	-0.312	-0.383	-0.429	-0.299	-0.195	-0.143
74.7	0.005	-0.098	-0.154	-0.228	-0.314	-0.384	-0.428	-0.305	-0.203	-0.145
76.1	0.006	-0.096	-0.154	-0.225	-0.302	-0.381	-0.426	-0.292	-0.202	-0.145
77.5	0.005	-0.093	-0.149	-0.222	-0.294	-0.391	-0.429	-0.297	-0.195	-0.146
78.9	0.003	-0.086	-0.140	-0.212	-0.291	-0.399	-0.427	-0.310	-0.203	-0.146
80.3	0.003	-0.086	-0.136	-0.210	-0.283	-0.396	-0.427	-0.315	-0.217	-0.146
81.7	0.004	-0.085	-0.138	-0.206	-0.275	-0.372	-0.422	-0.325	-0.221	-0.147
83.1	0.006	-0.084	-0.137	-0.201	-0.270	-0.355	-0.418	-0.330	-0.225	-0.147
84.5	0.004	-0.080	-0.127	-0.199	-0.264	-0.363	-0.415	-0.327	-0.226	-0.147
85.9	0.004	-0.075	-0.124	-0.193	-0.251	-0.356	-0.412	-0.326	-0.226	-0.147
87.3	0.006	-0.071	-0.122	-0.185	-0.244	-0.341	-0.405	-0.331	-0.229	-0.147
88.7	0.009	-0.066	-0.118	-0.183	-0.240	-0.322	-0.398	-0.326	-0.227	-0.148
90.1	0.007	-0.064	-0.116	-0.180	-0.236	-0.328	-0.393	-0.322	-0.224	-0.148
91.5	0.008	-0.065	-0.113	-0.176	-0.231	-0.318	-0.389	-0.323	-0.224	-0.148
92.9	0.012	-0.066	-0.111	-0.181	-0.226	-0.309	-0.383	-0.319	-0.222	-0.148
94.3	0.010	-0.065	-0.111	-0.179	-0.220	-0.303	-0.373	-0.320	-0.220	-0.149
95.8	0.005	-0.065	-0.110	-0.178	-0.213	-0.293	-0.369	-0.315	-0.215	-0.149
97.2	0.012	-0.063	-0.110	-0.177	-0.204	-0.290	-0.361	-0.311	-0.220	-0.150
98.6	0.016	-0.069	-0.112	-0.173	-0.195	-0.283	-0.345	-0.305	-0.216	-0.149
100.0	0.013	-0.070	-0.111	-0.175	-0.190	-0.283	-0.334	-0.298	-0.209	-0.149
101.4	0.015	-0.064	-0.111	-0.171	-0.183	-0.276	-0.325	-0.291	-0.200	-0.148
102.8	0.016	-0.063	-0.107	-0.169	-0.178	-0.257	-0.317	-0.287	-0.196	-0.148
104.2	0.017	-0.064	-0.105	-0.167	-0.165	-0.236	-0.307	-0.286	-0.196	-0.149
105.6	0.016	-0.067	-0.107	-0.167	-0.157	-0.218	-0.292	-0.282	-0.191	-0.149
107.0	0.014	-0.069	-0.106	-0.167	-0.147	-0.196	-0.279	-0.278	-0.191	-0.148
108.4	0.012	-0.066	-0.105	-0.162	-0.135	-0.178	-0.259	-0.270	-0.186	-0.148
109.8	0.013	-0.065	-0.107	-0.160	-0.129	-0.169	-0.236	-0.261	-0.185	-0.147
111.2	0.019	-0.063	-0.103	-0.156	-0.123	-0.160	-0.216	-0.247	-0.176	-0.145
112.6	0.018	-0.060	-0.096	-0.156	-0.120	-0.144	-0.199	-0.231	-0.159	-0.146
114.0	0.021	-0.062	-0.097	-0.156	-0.121	-0.138	-0.186	-0.218	-0.151	-0.146
115.4	0.025	-0.062	-0.097	-0.157	-0.133	-0.145	-0.179	-0.207	-0.144	-0.145
116.8	0.024	-0.063	-0.107	-0.170	-0.148	-0.147	-0.184	-0.197	-0.133	-0.145
118.3	0.023	-0.068	-0.120	-0.181	-0.156	-0.148	-0.186	-0.193	-0.121	-0.144
119.7	0.019	-0.075	-0.127	-0.188	-0.160	-0.148	-0.180	-0.195	-0.121	-0.143
121.1	0.021	-0.083	-0.131	-0.192	-0.169	-0.158	-0.178	-0.192	-0.129	-0.142
122.5	0.024	-0.089	-0.133	-0.200	-0.190	-0.187	-0.191	-0.188	-0.127	-0.141

Table 18. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.022	-0.094	-0.149	-0.212	-0.197	-0.197	-0.199	-0.184	-0.119	-0.140
125.3	0.023	-0.102	-0.152	-0.216	-0.198	-0.188	-0.192	-0.187	-0.118	-0.139
126.7	0.023	-0.107	-0.154	-0.217	-0.195	-0.190	-0.188	-0.183	-0.120	-0.138
128.1	0.023	-0.106	-0.149	-0.213	-0.203	-0.205	-0.197	-0.162	-0.111	-0.138
129.5	0.018	-0.101	-0.147	-0.211	-0.222	-0.235	-0.214	-0.151	-0.099	-0.138
130.9	0.013	-0.096	-0.157	-0.220	-0.231	-0.252	-0.227	-0.157	-0.091	-0.139
132.3	0.014	-0.102	-0.167	-0.232	-0.243	-0.258	-0.231	-0.166	-0.092	-0.139
133.7	0.010	-0.110	-0.174	-0.239	-0.244	-0.268	-0.240	-0.172	-0.104	-0.139
135.1	0.010	-0.118	-0.172	-0.239	-0.256	-0.284	-0.258	-0.166	-0.102	-0.139
136.5	0.013	-0.127	-0.175	-0.241	-0.269	-0.293	-0.268	-0.165	-0.099	-0.139
137.9	0.011	-0.124	-0.171	-0.240	-0.270	-0.291	-0.265	-0.172	-0.103	-0.139
139.3	0.010	-0.118	-0.171	-0.240	-0.270	-0.290	-0.274	-0.155	-0.095	-0.139
140.8	0.008	-0.116	-0.173	-0.237	-0.274	-0.307	-0.287	-0.153	-0.088	-0.140
142.2	0.010	-0.112	-0.168	-0.237	-0.280	-0.317	-0.293	-0.172	-0.094	-0.140
143.6	0.006	-0.115	-0.171	-0.245	-0.281	-0.318	-0.304	-0.169	-0.106	-0.141
145.0	0.003	-0.116	-0.176	-0.244	-0.290	-0.325	-0.316	-0.155	-0.095	-0.142
146.4	0.006	-0.110	-0.176	-0.240	-0.298	-0.332	-0.325	-0.159	-0.084	-0.143
147.8	0.003	-0.110	-0.166	-0.237	-0.299	-0.334	-0.332	-0.167	-0.085	-0.143
149.2	0.001	-0.104	-0.162	-0.235	-0.292	-0.354	-0.347	-0.179	-0.090	-0.143
150.6	0.003	-0.105	-0.165	-0.235	-0.297	-0.354	-0.364	-0.196	-0.106	-0.143
152.0	0.006	-0.107	-0.168	-0.237	-0.301	-0.363	-0.383	-0.200	-0.109	-0.142
153.4	0.006	-0.106	-0.169	-0.241	-0.308	-0.377	-0.392	-0.221	-0.120	-0.140
154.8	0.005	-0.107	-0.172	-0.242	-0.317	-0.380	-0.409	-0.242	-0.136	-0.140
156.2	0.005	-0.105	-0.167	-0.240	-0.319	-0.394	-0.415	-0.262	-0.156	-0.139
157.6	0.004	-0.105	-0.167	-0.241	-0.318	-0.400	-0.413	-0.263	-0.168	-0.140
159.0	0.006	-0.106	-0.167	-0.237	-0.310	-0.416	-0.422	-0.270	-0.166	-0.140
160.4	0.010	-0.098	-0.154	-0.228	-0.308	-0.417	-0.420	-0.275	-0.178	-0.141
161.8	0.009	-0.090	-0.147	-0.222	-0.305	-0.387	-0.422	-0.283	-0.178	-0.143
163.3	0.007	-0.088	-0.146	-0.218	-0.300	-0.387	-0.418	-0.287	-0.181	-0.144
164.7	0.008	-0.086	-0.144	-0.215	-0.298	-0.394	-0.416	-0.284	-0.182	-0.144
166.1	0.010	-0.080	-0.137	-0.212	-0.293	-0.382	-0.412	-0.285	-0.183	-0.144
167.5	0.009	-0.075	-0.128	-0.207	-0.290	-0.381	-0.405	-0.285	-0.186	-0.144
168.9	0.011	-0.071	-0.127	-0.201	-0.279	-0.362	-0.398	-0.280	-0.179	-0.145
170.3	0.015	-0.069	-0.131	-0.202	-0.269	-0.345	-0.395	-0.265	-0.170	-0.145
171.7	0.018	-0.073	-0.129	-0.197	-0.264	-0.353	-0.397	-0.283	-0.177	-0.144
173.1	0.016	-0.070	-0.123	-0.193	-0.260	-0.367	-0.395	-0.301	-0.189	-0.144
174.5	0.019	-0.066	-0.120	-0.189	-0.254	-0.359	-0.390	-0.292	-0.194	-0.144
175.9	0.020	-0.064	-0.114	-0.181	-0.246	-0.341	-0.387	-0.291	-0.193	-0.145
177.3	0.018	-0.059	-0.110	-0.179	-0.236	-0.326	-0.381	-0.293	-0.191	-0.144
178.7	0.018	-0.059	-0.116	-0.174	-0.232	-0.322	-0.375	-0.298	-0.193	-0.145
180.1	0.016	-0.060	-0.104	-0.174	-0.227	-0.325	-0.369	-0.297	-0.196	-0.145
181.5	0.018	-0.059	-0.108	-0.176	-0.220	-0.324	-0.365	-0.293	-0.196	-0.145
182.9	0.019	-0.061	-0.111	-0.172	-0.214	-0.322	-0.362	-0.296	-0.198	-0.145
184.3	0.019	-0.059	-0.106	-0.173	-0.210	-0.318	-0.350	-0.292	-0.193	-0.145

Table 18. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.021	-0.061	-0.106	-0.175	-0.208	-0.303	-0.342	-0.286	-0.190	-0.146
187.2	0.020	-0.061	-0.101	-0.171	-0.193	-0.276	-0.333	-0.281	-0.183	-0.146
188.6	0.020	-0.058	-0.102	-0.166	-0.190	-0.264	-0.320	-0.273	-0.175	-0.146
190.0	0.024	-0.059	-0.105	-0.167	-0.190	-0.252	-0.317	-0.272	-0.174	-0.146
191.4	0.022	-0.058	-0.103	-0.167	-0.181	-0.249	-0.308	-0.271	-0.175	-0.145
192.8	0.025	-0.057	-0.102	-0.167	-0.172	-0.242	-0.296	-0.265	-0.173	-0.145
194.2	0.026	-0.059	-0.101	-0.169	-0.159	-0.219	-0.285	-0.263	-0.168	-0.144
195.6	0.027	-0.061	-0.107	-0.167	-0.147	-0.189	-0.276	-0.261	-0.167	-0.143
197.0	0.029	-0.061	-0.100	-0.163	-0.140	-0.175	-0.252	-0.253	-0.166	-0.143
198.4	0.028	-0.058	-0.094	-0.157	-0.122	-0.152	-0.229	-0.242	-0.154	-0.142
199.8	0.034	-0.059	-0.093	-0.149	-0.102	-0.133	-0.211	-0.233	-0.143	-0.140
201.2	0.035	-0.054	-0.086	-0.141	-0.101	-0.127	-0.186	-0.218	-0.138	-0.140
202.6	0.032	-0.048	-0.085	-0.138	-0.097	-0.118	-0.170	-0.205	-0.131	-0.140
204.0	0.035	-0.047	-0.082	-0.138	-0.091	-0.101	-0.156	-0.189	-0.120	-0.139
205.4	0.037	-0.049	-0.084	-0.140	-0.093	-0.080	-0.138	-0.172	-0.110	-0.139
206.8	0.032	-0.048	-0.089	-0.144	-0.098	-0.077	-0.126	-0.163	-0.095	-0.139
208.3	0.033	-0.049	-0.093	-0.152	-0.109	-0.100	-0.124	-0.149	-0.087	-0.137
209.7	0.039	-0.058	-0.101	-0.162	-0.128	-0.114	-0.129	-0.142	-0.082	-0.137
211.1	0.040	-0.068	-0.113	-0.174	-0.143	-0.130	-0.139	-0.139	-0.072	-0.136
212.5	0.037	-0.077	-0.128	-0.191	-0.158	-0.144	-0.150	-0.141	-0.070	-0.135
213.9	0.039	-0.091	-0.142	-0.203	-0.162	-0.134	-0.149	-0.147	-0.077	-0.134
215.3	0.037	-0.102	-0.141	-0.202	-0.164	-0.137	-0.145	-0.148	-0.085	-0.134
216.7	0.031	-0.101	-0.139	-0.200	-0.177	-0.152	-0.159	-0.136	-0.078	-0.133
218.1	0.031	-0.097	-0.142	-0.205	-0.190	-0.182	-0.170	-0.122	-0.061	-0.133
219.5	0.030	-0.096	-0.148	-0.216	-0.200	-0.201	-0.185	-0.121	-0.056	-0.133
220.9	0.024	-0.109	-0.161	-0.224	-0.224	-0.226	-0.198	-0.128	-0.062	-0.134
222.3	0.023	-0.115	-0.164	-0.233	-0.244	-0.243	-0.214	-0.130	-0.066	-0.133
223.7	0.025	-0.120	-0.175	-0.242	-0.242	-0.252	-0.228	-0.138	-0.067	-0.134
225.1	0.023	-0.130	-0.179	-0.244	-0.245	-0.260	-0.228	-0.136	-0.072	-0.134
226.5	0.020	-0.125	-0.171	-0.241	-0.250	-0.264	-0.236	-0.121	-0.063	-0.134
227.9	0.017	-0.118	-0.173	-0.238	-0.251	-0.269	-0.241	-0.121	-0.054	-0.134
229.3	0.012	-0.119	-0.172	-0.241	-0.263	-0.279	-0.250	-0.116	-0.057	-0.134
230.8	0.014	-0.121	-0.174	-0.241	-0.269	-0.301	-0.270	-0.120	-0.053	-0.135
232.2	0.017	-0.122	-0.184	-0.247	-0.273	-0.319	-0.281	-0.139	-0.061	-0.135
233.6	0.017	-0.123	-0.182	-0.251	-0.280	-0.329	-0.295	-0.138	-0.068	-0.135
235.0	0.016	-0.127	-0.184	-0.247	-0.286	-0.333	-0.307	-0.134	-0.061	-0.135
236.4	0.014	-0.121	-0.175	-0.243	-0.291	-0.325	-0.312	-0.138	-0.057	-0.135
237.8	0.013	-0.112	-0.169	-0.241	-0.286	-0.326	-0.323	-0.128	-0.050	-0.134
239.2	0.010	-0.113	-0.173	-0.242	-0.291	-0.340	-0.337	-0.139	-0.053	-0.135
240.6	0.007	-0.113	-0.168	-0.243	-0.298	-0.362	-0.352	-0.160	-0.070	-0.135
242.0	0.013	-0.111	-0.171	-0.242	-0.305	-0.381	-0.370	-0.182	-0.080	-0.134
243.4	0.013	-0.111	-0.165	-0.237	-0.312	-0.389	-0.378	-0.203	-0.102	-0.133
244.8	0.010	-0.110	-0.168	-0.244	-0.312	-0.394	-0.388	-0.205	-0.121	-0.133
246.2	0.008	-0.117	-0.174	-0.252	-0.314	-0.389	-0.395	-0.206	-0.112	-0.133

Table 18. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.009	-0.120	-0.171	-0.245	-0.309	-0.374	-0.401	-0.223	-0.122	-0.133
249.0	0.013	-0.115	-0.163	-0.238	-0.312	-0.383	-0.411	-0.248	-0.142	-0.135
250.4	0.014	-0.106	-0.161	-0.233	-0.315	-0.389	-0.412	-0.265	-0.163	-0.137
251.8	0.015	-0.101	-0.155	-0.228	-0.306	-0.372	-0.412	-0.265	-0.168	-0.138
253.3	0.009	-0.098	-0.155	-0.225	-0.304	-0.373	-0.417	-0.257	-0.157	-0.138
254.7	0.007	-0.093	-0.153	-0.224	-0.301	-0.377	-0.418	-0.266	-0.157	-0.138
256.1	0.008	-0.093	-0.144	-0.218	-0.298	-0.393	-0.415	-0.277	-0.166	-0.139
257.5	0.009	-0.092	-0.142	-0.216	-0.299	-0.402	-0.409	-0.275	-0.174	-0.142
258.9	0.008	-0.089	-0.139	-0.213	-0.290	-0.386	-0.410	-0.270	-0.171	-0.143
260.3	0.011	-0.085	-0.143	-0.210	-0.282	-0.369	-0.411	-0.279	-0.172	-0.143
261.7	0.013	-0.082	-0.132	-0.207	-0.278	-0.351	-0.408	-0.289	-0.176	-0.143
263.1	0.009	-0.082	-0.128	-0.202	-0.272	-0.347	-0.406	-0.293	-0.185	-0.143
264.5	0.009	-0.080	-0.132	-0.200	-0.270	-0.350	-0.400	-0.296	-0.194	-0.144
265.9	0.009	-0.078	-0.127	-0.200	-0.261	-0.344	-0.400	-0.301	-0.196	-0.144
267.3	0.011	-0.077	-0.125	-0.190	-0.250	-0.340	-0.395	-0.307	-0.200	-0.145
268.7	0.012	-0.074	-0.120	-0.186	-0.248	-0.324	-0.388	-0.304	-0.200	-0.144
270.1	0.009	-0.073	-0.114	-0.185	-0.246	-0.321	-0.385	-0.300	-0.197	-0.145
271.5	0.006	-0.072	-0.115	-0.187	-0.239	-0.324	-0.384	-0.304	-0.202	-0.146
272.9	0.009	-0.072	-0.119	-0.186	-0.230	-0.309	-0.374	-0.309	-0.209	-0.146
274.3	0.010	-0.077	-0.122	-0.185	-0.226	-0.305	-0.366	-0.305	-0.207	-0.147
275.8	0.009	-0.074	-0.122	-0.183	-0.219	-0.299	-0.360	-0.302	-0.202	-0.147
277.2	0.011	-0.075	-0.120	-0.183	-0.209	-0.297	-0.347	-0.293	-0.200	-0.146
278.6	0.012	-0.075	-0.118	-0.182	-0.203	-0.285	-0.341	-0.290	-0.199	-0.146
280.0	0.014	-0.074	-0.119	-0.179	-0.196	-0.279	-0.328	-0.285	-0.196	-0.145
281.4	0.015	-0.074	-0.113	-0.177	-0.192	-0.279	-0.314	-0.280	-0.190	-0.146
282.8	0.017	-0.069	-0.110	-0.174	-0.183	-0.270	-0.298	-0.268	-0.181	-0.146
284.2	0.016	-0.067	-0.110	-0.172	-0.164	-0.243	-0.286	-0.262	-0.173	-0.145
285.6	0.015	-0.066	-0.107	-0.169	-0.153	-0.208	-0.273	-0.261	-0.170	-0.145
287.0	0.013	-0.068	-0.106	-0.166	-0.142	-0.181	-0.257	-0.254	-0.168	-0.145
288.4	0.011	-0.070	-0.100	-0.164	-0.137	-0.157	-0.238	-0.247	-0.163	-0.144
289.8	0.011	-0.064	-0.097	-0.160	-0.124	-0.151	-0.216	-0.234	-0.156	-0.143
291.2	0.015	-0.061	-0.094	-0.158	-0.113	-0.148	-0.196	-0.220	-0.145	-0.143
292.6	0.019	-0.060	-0.097	-0.156	-0.115	-0.131	-0.178	-0.204	-0.137	-0.142
294.0	0.018	-0.061	-0.102	-0.156	-0.116	-0.126	-0.165	-0.199	-0.133	-0.142
295.4	0.015	-0.066	-0.104	-0.165	-0.130	-0.134	-0.162	-0.197	-0.129	-0.142
296.8	0.020	-0.070	-0.117	-0.180	-0.145	-0.132	-0.171	-0.185	-0.123	-0.142
298.3	0.019	-0.078	-0.125	-0.189	-0.158	-0.161	-0.173	-0.186	-0.115	-0.142
299.7	0.017	-0.088	-0.135	-0.203	-0.167	-0.166	-0.167	-0.187	-0.112	-0.142
301.1	0.021	-0.100	-0.146	-0.213	-0.168	-0.144	-0.159	-0.180	-0.113	-0.141
302.5	0.019	-0.111	-0.149	-0.212	-0.172	-0.149	-0.149	-0.178	-0.112	-0.141
303.9	0.016	-0.113	-0.152	-0.215	-0.177	-0.155	-0.149	-0.162	-0.109	-0.140
305.3	0.013	-0.111	-0.146	-0.217	-0.174	-0.149	-0.149	-0.154	-0.094	-0.139
306.7	0.010	-0.109	-0.154	-0.215	-0.187	-0.180	-0.157	-0.139	-0.079	-0.139
308.1	0.014	-0.110	-0.149	-0.212	-0.202	-0.188	-0.164	-0.125	-0.070	-0.140

Table 18. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.011	-0.109	-0.144	-0.216	-0.210	-0.183	-0.172	-0.126	-0.063	-0.139
310.9	0.004	-0.106	-0.154	-0.225	-0.227	-0.215	-0.187	-0.122	-0.061	-0.138
312.3	0.005	-0.112	-0.173	-0.234	-0.238	-0.229	-0.204	-0.137	-0.060	-0.139
313.7	0.006	-0.126	-0.190	-0.248	-0.243	-0.237	-0.215	-0.152	-0.072	-0.138
315.1	0.010	-0.137	-0.184	-0.255	-0.245	-0.253	-0.217	-0.151	-0.084	-0.137
316.5	0.013	-0.136	-0.177	-0.250	-0.252	-0.275	-0.230	-0.138	-0.077	-0.136
317.9	0.013	-0.129	-0.177	-0.247	-0.266	-0.296	-0.250	-0.130	-0.065	-0.134
319.3	0.012	-0.130	-0.188	-0.253	-0.278	-0.295	-0.263	-0.147	-0.074	-0.134
320.8	0.012	-0.135	-0.195	-0.263	-0.279	-0.298	-0.272	-0.164	-0.087	-0.135
322.2	0.008	-0.139	-0.192	-0.265	-0.282	-0.315	-0.282	-0.161	-0.090	-0.135
323.6	0.008	-0.141	-0.189	-0.257	-0.284	-0.310	-0.290	-0.160	-0.087	-0.135
325.0	0.008	-0.139	-0.179	-0.252	-0.286	-0.298	-0.300	-0.150	-0.080	-0.134
326.4	0.008	-0.130	-0.175	-0.255	-0.289	-0.310	-0.300	-0.148	-0.075	-0.136
327.8	0.002	-0.123	-0.183	-0.252	-0.289	-0.310	-0.303	-0.142	-0.069	-0.137
329.2	0.003	-0.122	-0.177	-0.250	-0.297	-0.314	-0.321	-0.144	-0.065	-0.137
330.6	0.007	-0.119	-0.173	-0.252	-0.305	-0.326	-0.341	-0.170	-0.071	-0.137
332.0	0.008	-0.122	-0.177	-0.251	-0.315	-0.341	-0.355	-0.195	-0.095	-0.136
333.4	0.006	-0.126	-0.180	-0.253	-0.313	-0.347	-0.357	-0.188	-0.103	-0.135
334.8	0.004	-0.124	-0.180	-0.254	-0.307	-0.358	-0.374	-0.198	-0.104	-0.135
336.2	0.007	-0.125	-0.184	-0.253	-0.317	-0.372	-0.380	-0.215	-0.119	-0.136
337.6	0.003	-0.126	-0.180	-0.250	-0.319	-0.384	-0.385	-0.221	-0.122	-0.136
339.0	0.003	-0.119	-0.171	-0.246	-0.318	-0.375	-0.394	-0.244	-0.135	-0.138
340.4	0.008	-0.118	-0.166	-0.240	-0.320	-0.368	-0.396	-0.257	-0.150	-0.139
341.8	0.006	-0.112	-0.158	-0.234	-0.312	-0.365	-0.401	-0.260	-0.155	-0.139
343.3	0.006	-0.105	-0.162	-0.236	-0.307	-0.361	-0.399	-0.260	-0.157	-0.140
344.7	0.007	-0.101	-0.156	-0.233	-0.307	-0.350	-0.399	-0.256	-0.156	-0.140
346.1	0.002	-0.101	-0.148	-0.227	-0.303	-0.348	-0.402	-0.258	-0.156	-0.141
347.5	0.005	-0.099	-0.148	-0.226	-0.300	-0.355	-0.399	-0.274	-0.162	-0.141
348.9	0.010	-0.094	-0.147	-0.222	-0.296	-0.341	-0.390	-0.278	-0.166	-0.142
350.3	0.013	-0.092	-0.147	-0.217	-0.291	-0.343	-0.383	-0.268	-0.166	-0.142
351.7	0.015	-0.088	-0.143	-0.214	-0.286	-0.338	-0.379	-0.264	-0.159	-0.142
353.1	0.015	-0.089	-0.138	-0.208	-0.276	-0.337	-0.374	-0.261	-0.156	-0.142
354.5	0.013	-0.082	-0.134	-0.203	-0.271	-0.337	-0.369	-0.260	-0.154	-0.142
355.9	0.013	-0.079	-0.129	-0.199	-0.262	-0.340	-0.367	-0.269	-0.159	-0.142
357.3	0.016	-0.077	-0.127	-0.197	-0.256	-0.331	-0.361	-0.266	-0.162	-0.141
358.7	0.019	-0.072	-0.118	-0.191	-0.246	-0.310	-0.356	-0.263	-0.159	-0.140

Table 19. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0656$, $\mu = 0.151$, $\alpha_s = -3.0°$, $\theta = 10.3°$, $A_1 = -2.7°$, $B_1 = 2.4°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.321	0.174	0.058	0.110	0.011	-0.200	-0.288	-0.257	0.071	0.008	-0.044
1.5	0.327	0.181	0.064	0.111	0.014	-0.202	-0.272	-0.255	0.091	0.021	-0.041
2.9	0.335	0.189	0.067	0.116	0.017	-0.202	-0.263	-0.249	0.110	0.037	-0.033
4.3	0.342	0.195	0.075	0.126	0.021	-0.196	-0.264	-0.250	0.132	0.053	-0.023
5.8	0.348	0.204	0.089	0.138	0.027	-0.195	-0.259	-0.246	0.159	0.073	-0.014
7.2	0.357	0.213	0.102	0.148	0.030	-0.198	-0.245	-0.244	0.182	0.095	-0.004
8.6	0.364	0.225	0.116	0.160	0.033	-0.201	-0.238	-0.244	0.207	0.113	0.008
10.0	0.374	0.243	0.128	0.171	0.034	-0.198	-0.235	-0.244	0.241	0.140	0.017
11.4	0.391	0.258	0.139	0.181	0.036	-0.196	-0.220	-0.245	0.271	0.165	0.026
12.8	0.406	0.273	0.154	0.191	0.039	-0.199	-0.211	-0.243	0.294	0.190	0.041
14.2	0.419	0.287	0.167	0.206	0.045	-0.203	-0.201	-0.240	0.327	0.218	0.057
15.6	0.430	0.304	0.186	0.223	0.052	-0.201	-0.176	-0.236	0.360	0.247	0.073
17.0	0.446	0.326	0.209	0.241	0.056	-0.199	-0.152	-0.230	0.383	0.276	0.093
18.4	0.468	0.347	0.232	0.256	0.057	-0.204	-0.132	-0.217	0.406	0.304	0.109
19.8	0.484	0.370	0.246	0.268	0.056	-0.204	-0.113	-0.206	0.434	0.335	0.124
21.2	0.503	0.394	0.263	0.283	0.058	-0.207	-0.084	-0.197	0.459	0.355	0.140
22.6	0.525	0.417	0.286	0.297	0.061	-0.211	-0.061	-0.181	0.489	0.374	0.149
24.0	0.548	0.443	0.310	0.313	0.067	-0.208	-0.054	-0.165	0.516	0.388	0.153
25.4	0.572	0.472	0.330	0.335	0.072	-0.206	-0.036	-0.151	0.524	0.391	0.159
26.8	0.593	0.497	0.350	0.350	0.078	-0.207	-0.018	-0.134	0.524	0.392	0.152
28.3	0.611	0.517	0.373	0.367	0.082	-0.208	-0.014	-0.115	0.520	0.387	0.141
29.7	0.627	0.533	0.389	0.381	0.084	-0.208	-0.028	-0.101	0.500	0.384	0.133
31.1	0.639	0.551	0.409	0.398	0.085	-0.209	-0.065	-0.095	0.482	0.375	0.122
32.5	0.651	0.573	0.426	0.410	0.090	-0.209	-0.075	-0.094	0.484	0.357	0.113
33.9	0.664	0.584	0.436	0.416	0.097	-0.206	-0.077	-0.097	0.469	0.316	0.110
35.3	0.670	0.587	0.439	0.420	0.098	-0.203	-0.098	-0.094	0.420	0.281	0.105
36.7	0.670	0.592	0.443	0.424	0.097	-0.203	-0.113	-0.085	0.341	0.278	0.095
38.1	0.672	0.591	0.443	0.424	0.094	-0.207	-0.111	-0.075	0.297	0.244	0.085
39.5	0.670	0.586	0.438	0.421	0.092	-0.208	-0.131	-0.064	0.267	0.192	0.076
40.9	0.661	0.577	0.431	0.415	0.092	-0.206	-0.160	-0.056	0.263	0.165	0.058
42.3	0.649	0.563	0.420	0.405	0.093	-0.203	-0.174	-0.063	0.272	0.128	0.018
43.7	0.632	0.544	0.407	0.396	0.093	-0.196	-0.185	-0.078	0.236	0.083	-0.004
45.1	0.616	0.523	0.384	0.382	0.090	-0.192	-0.193	-0.080	0.206	0.074	-0.034
46.5	0.595	0.499	0.363	0.362	0.087	-0.189	-0.210	-0.068	0.185	0.072	-0.047
47.9	0.574	0.472	0.344	0.349	0.081	-0.186	-0.226	-0.064	0.174	0.080	-0.008
49.3	0.549	0.445	0.323	0.335	0.079	-0.189	-0.233	-0.069	0.168	0.097	0.003
50.8	0.527	0.422	0.301	0.315	0.078	-0.190	-0.241	-0.079	0.162	0.072	-0.021
52.2	0.509	0.398	0.278	0.297	0.071	-0.192	-0.247	-0.092	0.153	0.054	-0.026
53.6	0.488	0.374	0.257	0.281	0.065	-0.189	-0.268	-0.097	0.133	0.050	-0.010
55.0	0.469	0.353	0.234	0.266	0.061	-0.188	-0.290	-0.097	0.124	0.039	-0.031
56.4	0.451	0.330	0.215	0.250	0.056	-0.191	-0.307	-0.100	0.114	0.012	-0.039
57.8	0.435	0.310	0.199	0.233	0.052	-0.195	-0.319	-0.115	0.084	-0.002	-0.037
59.2	0.419	0.290	0.180	0.216	0.047	-0.199	-0.330	-0.130	0.053	0.007	-0.047
60.6	0.405	0.278	0.162	0.203	0.040	-0.201	-0.354	-0.142	0.031	-0.011	-0.052

Table 19. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.395	0.263	0.147	0.188	0.034	-0.202	-0.372	-0.172	0.018	-0.030	-0.056
63.4	0.381	0.246	0.132	0.174	0.030	-0.204	-0.377	-0.197	0.014	-0.037	-0.061
64.8	0.368	0.232	0.118	0.163	0.028	-0.209	-0.374	-0.207	0.012	-0.043	-0.064
66.2	0.356	0.220	0.105	0.151	0.023	-0.208	-0.375	-0.221	0.005	-0.056	-0.073
67.6	0.348	0.209	0.095	0.145	0.020	-0.209	-0.380	-0.232	-0.004	-0.056	-0.074
69.0	0.343	0.199	0.087	0.133	0.018	-0.209	-0.380	-0.250	-0.008	-0.061	-0.075
70.4	0.335	0.190	0.076	0.124	0.012	-0.212	-0.385	-0.265	-0.012	-0.062	-0.083
71.8	0.328	0.183	0.067	0.119	0.010	-0.215	-0.393	-0.277	-0.018	-0.064	-0.081
73.3	0.322	0.177	0.061	0.113	0.011	-0.211	-0.394	-0.288	-0.014	-0.078	-0.081
74.7	0.318	0.169	0.056	0.107	0.009	-0.214	-0.386	-0.291	-0.018	-0.078	-0.084
76.1	0.312	0.165	0.051	0.103	0.004	-0.223	-0.381	-0.288	-0.024	-0.078	-0.084
77.5	0.307	0.162	0.047	0.099	0.000	-0.226	-0.371	-0.284	-0.016	-0.075	-0.086
78.9	0.304	0.159	0.042	0.096	0.002	-0.227	-0.367	-0.290	-0.006	-0.065	-0.082
80.3	0.302	0.154	0.040	0.092	0.004	-0.231	-0.364	-0.304	-0.001	-0.061	-0.084
81.7	0.298	0.151	0.037	0.091	-0.001	-0.235	-0.356	-0.316	0.008	-0.057	-0.084
83.1	0.295	0.148	0.038	0.088	-0.006	-0.236	-0.354	-0.326	0.017	-0.050	-0.079
84.5	0.294	0.146	0.035	0.088	-0.008	-0.236	-0.349	-0.333	0.028	-0.040	-0.078
85.9	0.294	0.146	0.033	0.088	-0.011	-0.239	-0.331	-0.327	0.031	-0.027	-0.070
87.3	0.295	0.147	0.036	0.086	-0.010	-0.240	-0.323	-0.321	0.037	-0.015	-0.065
88.7	0.295	0.148	0.036	0.087	-0.006	-0.241	-0.311	-0.320	0.052	-0.005	-0.060
90.1	0.297	0.151	0.038	0.089	-0.004	-0.246	-0.292	-0.319	0.069	0.004	-0.050
91.5	0.300	0.156	0.043	0.094	-0.008	-0.248	-0.288	-0.315	0.091	0.012	-0.041
92.9	0.305	0.164	0.048	0.102	-0.007	-0.248	-0.282	-0.308	0.114	0.028	-0.035
94.3	0.314	0.170	0.058	0.111	-0.003	-0.245	-0.276	-0.305	0.133	0.045	-0.028
95.8	0.320	0.178	0.070	0.117	0.002	-0.244	-0.273	-0.303	0.161	0.066	-0.016
97.2	0.328	0.188	0.079	0.126	0.004	-0.244	-0.271	-0.299	0.180	0.092	-0.001
98.6	0.337	0.199	0.089	0.137	0.007	-0.238	-0.267	-0.293	0.204	0.116	0.011
100.0	0.347	0.214	0.102	0.146	0.013	-0.236	-0.246	-0.289	0.234	0.135	0.020
101.4	0.361	0.229	0.111	0.151	0.016	-0.234	-0.233	-0.279	0.260	0.154	0.033
102.8	0.376	0.242	0.121	0.159	0.021	-0.231	-0.218	-0.267	0.290	0.180	0.047
104.2	0.389	0.257	0.136	0.177	0.029	-0.227	-0.197	-0.260	0.325	0.206	0.057
105.6	0.401	0.272	0.156	0.195	0.034	-0.223	-0.178	-0.248	0.362	0.227	0.071
107.0	0.417	0.290	0.174	0.207	0.036	-0.223	-0.150	-0.243	0.381	0.255	0.092
108.4	0.434	0.310	0.185	0.214	0.038	-0.224	-0.141	-0.238	0.401	0.281	0.104
109.8	0.451	0.328	0.201	0.228	0.037	-0.225	-0.109	-0.225	0.439	0.307	0.118
111.2	0.468	0.348	0.216	0.237	0.035	-0.229	-0.084	-0.213	0.467	0.341	0.134
112.6	0.483	0.363	0.226	0.242	0.035	-0.229	-0.075	-0.195	0.480	0.358	0.145
114.0	0.495	0.377	0.239	0.252	0.039	-0.227	-0.054	-0.174	0.499	0.369	0.150
115.4	0.508	0.401	0.254	0.264	0.045	-0.224	-0.035	-0.161	0.519	0.379	0.149
116.8	0.530	0.419	0.270	0.278	0.048	-0.220	-0.035	-0.148	0.518	0.378	0.146
118.3	0.541	0.426	0.286	0.293	0.046	-0.219	-0.045	-0.134	0.487	0.380	0.138
119.7	0.546	0.439	0.295	0.300	0.051	-0.219	-0.064	-0.126	0.461	0.375	0.137
121.1	0.554	0.458	0.313	0.308	0.059	-0.217	-0.092	-0.121	0.438	0.362	0.126
122.5	0.565	0.469	0.325	0.322	0.062	-0.212	-0.118	-0.118	0.433	0.325	0.105

Table 19. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.572	0.475	0.332	0.328	0.064	-0.211	-0.137	-0.117	0.443	0.296	0.111
125.3	0.575	0.484	0.337	0.332	0.060	-0.215	-0.145	-0.118	0.425	0.287	0.102
126.7	0.581	0.486	0.342	0.340	0.060	-0.216	-0.142	-0.116	0.381	0.266	0.093
128.1	0.581	0.487	0.348	0.343	0.062	-0.215	-0.143	-0.104	0.337	0.251	0.091
129.5	0.577	0.483	0.343	0.335	0.060	-0.215	-0.161	-0.093	0.281	0.193	0.055
130.9	0.571	0.475	0.334	0.328	0.056	-0.213	-0.182	-0.088	0.225	0.135	0.027
132.3	0.565	0.471	0.324	0.323	0.057	-0.210	-0.197	-0.085	0.217	0.090	0.005
133.7	0.559	0.459	0.318	0.321	0.059	-0.207	-0.209	-0.078	0.228	0.068	-0.029
135.1	0.550	0.445	0.308	0.310	0.059	-0.205	-0.218	-0.073	0.245	0.061	-0.043
136.5	0.534	0.426	0.292	0.302	0.059	-0.202	-0.233	-0.076	0.207	0.078	-0.037
137.9	0.516	0.408	0.283	0.297	0.057	-0.196	-0.244	-0.083	0.176	0.099	-0.034
139.3	0.500	0.395	0.269	0.284	0.055	-0.194	-0.251	-0.077	0.187	0.101	-0.006
140.8	0.488	0.373	0.251	0.269	0.050	-0.194	-0.258	-0.073	0.184	0.085	0.006
142.2	0.471	0.358	0.237	0.255	0.055	-0.193	-0.272	-0.077	0.172	0.085	-0.001
143.6	0.458	0.341	0.217	0.245	0.056	-0.187	-0.296	-0.089	0.138	0.107	0.007
145.0	0.443	0.323	0.202	0.235	0.055	-0.187	-0.308	-0.102	0.117	0.074	0.000
146.4	0.431	0.304	0.189	0.224	0.052	-0.189	-0.311	-0.102	0.108	0.033	-0.029
147.8	0.414	0.282	0.172	0.212	0.045	-0.190	-0.319	-0.103	0.082	0.015	-0.037
149.2	0.398	0.268	0.157	0.199	0.045	-0.189	-0.336	-0.116	0.058	-0.003	-0.045
150.6	0.388	0.258	0.144	0.183	0.042	-0.190	-0.339	-0.130	0.043	-0.010	-0.061
152.0	0.378	0.242	0.129	0.171	0.039	-0.192	-0.338	-0.146	0.039	-0.008	-0.065
153.4	0.366	0.225	0.112	0.157	0.036	-0.189	-0.344	-0.160	0.035	-0.012	-0.069
154.8	0.353	0.214	0.098	0.147	0.038	-0.187	-0.350	-0.174	0.019	-0.016	-0.069
156.2	0.344	0.201	0.090	0.139	0.037	-0.189	-0.350	-0.188	0.016	-0.019	-0.064
157.6	0.335	0.191	0.081	0.131	0.036	-0.190	-0.360	-0.206	0.013	-0.022	-0.068
159.0	0.327	0.184	0.072	0.123	0.035	-0.191	-0.371	-0.231	0.006	-0.027	-0.075
160.4	0.321	0.177	0.063	0.116	0.034	-0.193	-0.373	-0.249	0.010	-0.032	-0.078
161.8	0.315	0.167	0.055	0.109	0.033	-0.190	-0.364	-0.250	0.011	-0.035	-0.082
163.3	0.308	0.157	0.047	0.100	0.030	-0.193	-0.366	-0.250	0.006	-0.034	-0.083
164.7	0.300	0.152	0.038	0.094	0.026	-0.199	-0.372	-0.256	0.001	-0.033	-0.088
166.1	0.296	0.147	0.034	0.091	0.025	-0.200	-0.364	-0.261	0.001	-0.036	-0.093
167.5	0.293	0.144	0.031	0.087	0.023	-0.204	-0.360	-0.267	0.006	-0.038	-0.093
168.9	0.292	0.141	0.028	0.082	0.020	-0.212	-0.355	-0.275	0.012	-0.039	-0.088
170.3	0.289	0.137	0.023	0.079	0.015	-0.215	-0.348	-0.283	0.026	-0.038	-0.087
171.7	0.285	0.134	0.021	0.074	0.010	-0.216	-0.338	-0.283	0.039	-0.032	-0.089
173.1	0.283	0.132	0.017	0.071	0.011	-0.218	-0.331	-0.281	0.051	-0.026	-0.086
174.5	0.282	0.129	0.014	0.067	0.010	-0.223	-0.324	-0.288	0.064	-0.018	-0.079
175.9	0.279	0.128	0.011	0.064	0.008	-0.230	-0.322	-0.290	0.072	-0.008	-0.071
177.3	0.280	0.128	0.012	0.064	0.006	-0.230	-0.310	-0.292	0.084	-0.005	-0.069
178.7	0.281	0.128	0.012	0.066	0.008	-0.230	-0.300	-0.300	0.095	0.006	-0.055
180.1	0.281	0.130	0.015	0.068	0.007	-0.236	-0.289	-0.300	0.101	0.022	-0.047
181.5	0.284	0.135	0.018	0.071	0.006	-0.238	-0.274	-0.294	0.118	0.034	-0.047
182.9	0.290	0.140	0.023	0.076	0.007	-0.236	-0.272	-0.289	0.143	0.048	-0.037
184.3	0.296	0.147	0.034	0.086	0.012	-0.238	-0.271	-0.290	0.173	0.064	-0.025

Table 19. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.301	0.154	0.044	0.092	0.012	-0.237	-0.265	-0.290	0.198	0.085	-0.015
187.2	0.307	0.164	0.052	0.099	0.015	-0.238	-0.249	-0.284	0.222	0.106	-0.007
188.6	0.315	0.174	0.059	0.104	0.016	-0.235	-0.233	-0.275	0.257	0.131	0.002
190.0	0.325	0.183	0.069	0.113	0.021	-0.235	-0.209	-0.267	0.289	0.154	0.016
191.4	0.335	0.198	0.078	0.120	0.026	-0.234	-0.203	-0.257	0.313	0.170	0.029
192.8	0.350	0.212	0.089	0.128	0.026	-0.231	-0.190	-0.255	0.346	0.202	0.040
194.2	0.362	0.225	0.104	0.143	0.029	-0.228	-0.163	-0.250	0.377	0.237	0.056
195.6	0.375	0.242	0.120	0.155	0.036	-0.226	-0.145	-0.238	0.406	0.266	0.074
197.0	0.390	0.261	0.137	0.169	0.036	-0.224	-0.110	-0.228	0.446	0.301	0.092
198.4	0.408	0.280	0.154	0.181	0.035	-0.224	-0.091	-0.214	0.476	0.328	0.107
199.8	0.428	0.301	0.168	0.190	0.038	-0.224	-0.079	-0.203	0.507	0.365	0.130
201.2	0.444	0.322	0.183	0.204	0.039	-0.224	-0.050	-0.189	0.542	0.402	0.156
202.6	0.462	0.341	0.200	0.216	0.036	-0.224	-0.025	-0.174	0.576	0.421	0.175
204.0	0.477	0.359	0.219	0.229	0.035	-0.220	-0.006	-0.157	0.611	0.440	0.185
205.4	0.494	0.380	0.232	0.236	0.039	-0.213	0.016	-0.139	0.629	0.452	0.192
206.8	0.510	0.397	0.240	0.243	0.038	-0.213	0.023	-0.122	0.625	0.462	0.197
208.3	0.522	0.411	0.252	0.253	0.040	-0.214	0.020	-0.106	0.603	0.461	0.185
209.7	0.532	0.423	0.265	0.264	0.043	-0.212	-0.006	-0.094	0.565	0.448	0.179
211.1	0.537	0.429	0.279	0.275	0.040	-0.212	-0.053	-0.085	0.533	0.435	0.176
212.5	0.539	0.439	0.287	0.279	0.041	-0.213	-0.072	-0.088	0.524	0.413	0.171
213.9	0.541	0.443	0.292	0.284	0.039	-0.212	-0.065	-0.096	0.520	0.385	0.160
215.3	0.542	0.445	0.295	0.289	0.033	-0.209	-0.055	-0.096	0.499	0.369	0.145
216.7	0.544	0.447	0.298	0.289	0.035	-0.208	-0.056	-0.081	0.453	0.342	0.125
218.1	0.542	0.445	0.295	0.286	0.035	-0.213	-0.083	-0.060	0.409	0.294	0.105
219.5	0.537	0.434	0.282	0.278	0.032	-0.215	-0.108	-0.047	0.373	0.251	0.079
220.9	0.527	0.420	0.273	0.271	0.031	-0.213	-0.119	-0.046	0.328	0.156	0.083
222.3	0.517	0.411	0.266	0.267	0.029	-0.206	-0.144	-0.047	0.277	0.144	0.044
223.7	0.507	0.397	0.256	0.263	0.028	-0.199	-0.170	-0.046	0.269	0.147	-0.006
225.1	0.497	0.383	0.247	0.254	0.027	-0.193	-0.187	-0.048	0.254	0.097	-0.008
226.5	0.480	0.367	0.233	0.245	0.026	-0.190	-0.204	-0.053	0.241	0.080	-0.036
227.9	0.466	0.350	0.217	0.231	0.027	-0.191	-0.214	-0.060	0.227	0.115	-0.008
229.3	0.452	0.332	0.204	0.220	0.026	-0.195	-0.224	-0.059	0.206	0.125	-0.001
230.8	0.434	0.314	0.185	0.210	0.023	-0.195	-0.249	-0.064	0.200	0.104	0.007
232.2	0.422	0.297	0.170	0.197	0.018	-0.191	-0.263	-0.081	0.172	0.071	0.009
233.6	0.408	0.276	0.157	0.188	0.019	-0.189	-0.276	-0.094	0.147	0.053	-0.016
235.0	0.393	0.262	0.143	0.176	0.020	-0.192	-0.287	-0.093	0.138	0.035	-0.017
236.4	0.382	0.249	0.128	0.166	0.016	-0.196	-0.301	-0.092	0.111	0.003	-0.021
237.8	0.372	0.234	0.114	0.153	0.012	-0.196	-0.312	-0.103	0.080	-0.002	-0.034
239.2	0.362	0.223	0.101	0.141	0.008	-0.194	-0.312	-0.113	0.068	-0.010	-0.038
240.6	0.353	0.210	0.086	0.129	0.005	-0.195	-0.317	-0.127	0.060	-0.017	-0.044
242.0	0.341	0.197	0.074	0.120	0.003	-0.195	-0.327	-0.144	0.056	-0.019	-0.051
243.4	0.331	0.187	0.067	0.114	0.003	-0.195	-0.333	-0.161	0.050	-0.027	-0.060
244.8	0.323	0.174	0.056	0.103	0.003	-0.198	-0.343	-0.182	0.036	-0.036	-0.063
246.2	0.313	0.165	0.046	0.095	0.003	-0.197	-0.352	-0.186	0.022	-0.043	-0.061

Table 19. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.305	0.157	0.039	0.089	0.002	-0.194	-0.367	-0.193	0.010	-0.042	-0.061
249.0	0.301	0.153	0.034	0.085	0.002	-0.194	-0.365	-0.207	0.008	-0.048	-0.066
250.4	0.298	0.147	0.028	0.081	0.002	-0.198	-0.364	-0.220	0.012	-0.052	-0.073
251.8	0.293	0.139	0.022	0.076	0.003	-0.197	-0.380	-0.233	0.008	-0.048	-0.069
253.3	0.288	0.135	0.018	0.073	0.003	-0.197	-0.375	-0.240	-0.003	-0.046	-0.074
254.7	0.285	0.130	0.014	0.072	-0.001	-0.201	-0.377	-0.247	-0.002	-0.046	-0.082
256.1	0.281	0.129	0.014	0.069	-0.002	-0.203	-0.385	-0.249	0.005	-0.046	-0.083
257.5	0.280	0.128	0.013	0.065	-0.004	-0.205	-0.387	-0.258	0.007	-0.050	-0.084
258.9	0.279	0.127	0.009	0.065	-0.005	-0.206	-0.382	-0.265	0.013	-0.045	-0.084
260.3	0.278	0.126	0.009	0.065	-0.003	-0.210	-0.370	-0.268	0.020	-0.037	-0.083
261.7	0.277	0.124	0.009	0.062	-0.003	-0.214	-0.353	-0.271	0.028	-0.032	-0.083
263.1	0.278	0.124	0.007	0.061	-0.006	-0.218	-0.336	-0.269	0.039	-0.028	-0.079
264.5	0.279	0.126	0.009	0.061	-0.010	-0.222	-0.315	-0.273	0.048	-0.024	-0.072
265.9	0.280	0.127	0.009	0.060	-0.008	-0.225	-0.302	-0.282	0.054	-0.010	-0.069
267.3	0.282	0.128	0.009	0.061	-0.009	-0.226	-0.303	-0.280	0.060	0.001	-0.069
268.7	0.285	0.130	0.010	0.061	-0.013	-0.232	-0.284	-0.274	0.069	0.008	-0.062
270.1	0.288	0.133	0.012	0.064	-0.015	-0.234	-0.281	-0.270	0.084	0.014	-0.059
271.5	0.291	0.137	0.016	0.065	-0.015	-0.235	-0.287	-0.270	0.104	0.023	-0.054
272.9	0.296	0.144	0.019	0.072	-0.012	-0.238	-0.279	-0.273	0.126	0.035	-0.043
274.3	0.301	0.151	0.029	0.081	-0.008	-0.239	-0.278	-0.280	0.143	0.051	-0.032
275.8	0.308	0.157	0.042	0.087	-0.005	-0.239	-0.275	-0.283	0.164	0.069	-0.023
277.2	0.313	0.167	0.049	0.096	0.000	-0.237	-0.262	-0.281	0.186	0.090	-0.016
278.6	0.322	0.177	0.059	0.106	0.003	-0.239	-0.253	-0.275	0.209	0.108	-0.013
280.0	0.331	0.189	0.071	0.114	0.006	-0.237	-0.232	-0.264	0.239	0.131	-0.005
281.4	0.343	0.201	0.083	0.126	0.011	-0.234	-0.213	-0.250	0.269	0.154	0.007
282.8	0.355	0.217	0.095	0.135	0.012	-0.230	-0.203	-0.243	0.293	0.174	0.016
284.2	0.368	0.231	0.109	0.146	0.014	-0.226	-0.189	-0.239	0.314	0.203	0.030
285.6	0.382	0.246	0.125	0.161	0.017	-0.224	-0.168	-0.234	0.336	0.225	0.045
287.0	0.395	0.264	0.141	0.176	0.023	-0.222	-0.146	-0.231	0.358	0.250	0.059
288.4	0.412	0.287	0.162	0.191	0.024	-0.225	-0.122	-0.223	0.394	0.274	0.074
289.8	0.433	0.307	0.181	0.203	0.025	-0.229	-0.094	-0.209	0.430	0.297	0.091
291.2	0.450	0.328	0.195	0.213	0.026	-0.232	-0.068	-0.190	0.463	0.326	0.104
292.6	0.469	0.354	0.212	0.228	0.025	-0.228	-0.050	-0.173	0.501	0.354	0.113
294.0	0.492	0.377	0.229	0.242	0.027	-0.222	-0.039	-0.160	0.526	0.372	0.118
295.4	0.512	0.393	0.248	0.253	0.031	-0.220	-0.030	-0.143	0.530	0.382	0.117
296.8	0.526	0.413	0.265	0.268	0.035	-0.216	-0.023	-0.129	0.522	0.383	0.116
298.3	0.540	0.433	0.282	0.283	0.040	-0.212	-0.037	-0.115	0.508	0.374	0.116
299.7	0.555	0.451	0.303	0.298	0.047	-0.211	-0.058	-0.106	0.486	0.362	0.110
301.1	0.566	0.466	0.316	0.312	0.052	-0.206	-0.070	-0.103	0.479	0.349	0.098
302.5	0.575	0.480	0.329	0.324	0.055	-0.205	-0.078	-0.103	0.485	0.339	0.097
303.9	0.584	0.491	0.345	0.334	0.056	-0.203	-0.077	-0.102	0.490	0.319	0.086
305.3	0.591	0.496	0.353	0.343	0.060	-0.200	-0.085	-0.093	0.464	0.302	0.084
306.7	0.593	0.503	0.355	0.342	0.064	-0.200	-0.105	-0.079	0.392	0.267	0.062
308.1	0.595	0.503	0.354	0.342	0.062	-0.201	-0.111	-0.065	0.317	0.207	0.049

Table 19. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.590	0.495	0.350	0.342	0.058	-0.198	-0.133	-0.050	0.275	0.192	0.073
310.9	0.584	0.488	0.345	0.340	0.059	-0.192	-0.145	-0.044	0.237	0.193	0.052
312.3	0.575	0.476	0.338	0.333	0.058	-0.187	-0.163	-0.044	0.239	0.131	0.001
313.7	0.565	0.465	0.327	0.325	0.060	-0.181	-0.196	-0.056	0.260	0.057	-0.050
315.1	0.555	0.449	0.313	0.315	0.058	-0.178	-0.205	-0.061	0.243	0.055	-0.054
316.5	0.538	0.431	0.295	0.304	0.058	-0.177	-0.208	-0.057	0.185	0.079	-0.046
317.9	0.523	0.412	0.282	0.290	0.058	-0.178	-0.226	-0.060	0.174	0.083	-0.056
319.3	0.504	0.390	0.265	0.279	0.055	-0.177	-0.230	-0.066	0.186	0.099	-0.047
320.8	0.485	0.375	0.246	0.266	0.051	-0.172	-0.235	-0.068	0.188	0.098	-0.019
322.2	0.474	0.353	0.231	0.254	0.049	-0.169	-0.254	-0.066	0.175	0.101	0.008
323.6	0.456	0.332	0.213	0.240	0.050	-0.169	-0.274	-0.075	0.147	0.073	0.009
325.0	0.440	0.314	0.193	0.223	0.049	-0.171	-0.295	-0.093	0.109	0.048	-0.019
326.4	0.425	0.299	0.174	0.211	0.042	-0.172	-0.312	-0.101	0.091	0.026	-0.031
327.8	0.413	0.280	0.161	0.201	0.038	-0.172	-0.321	-0.098	0.082	0.007	-0.043
329.2	0.401	0.261	0.147	0.187	0.036	-0.174	-0.332	-0.107	0.060	0.001	-0.058
330.6	0.386	0.248	0.133	0.175	0.031	-0.177	-0.347	-0.131	0.050	-0.009	-0.062
332.0	0.374	0.238	0.121	0.163	0.027	-0.177	-0.353	-0.155	0.045	-0.016	-0.061
333.4	0.365	0.225	0.107	0.152	0.024	-0.180	-0.365	-0.160	0.032	-0.021	-0.065
334.8	0.355	0.211	0.093	0.139	0.024	-0.180	-0.368	-0.171	0.024	-0.036	-0.066
336.2	0.345	0.202	0.082	0.132	0.021	-0.180	-0.369	-0.187	0.010	-0.043	-0.066
337.6	0.340	0.194	0.074	0.124	0.020	-0.181	-0.363	-0.196	-0.001	-0.045	-0.068
339.0	0.336	0.187	0.066	0.117	0.019	-0.184	-0.359	-0.203	-0.006	-0.048	-0.073
340.4	0.329	0.178	0.058	0.112	0.017	-0.183	-0.361	-0.211	-0.013	-0.053	-0.076
341.8	0.322	0.170	0.052	0.105	0.016	-0.181	-0.360	-0.226	-0.015	-0.058	-0.077
343.3	0.315	0.165	0.047	0.102	0.015	-0.182	-0.361	-0.237	-0.019	-0.061	-0.080
344.7	0.314	0.160	0.044	0.098	0.015	-0.185	-0.360	-0.243	-0.026	-0.064	-0.083
346.1	0.310	0.157	0.042	0.096	0.016	-0.190	-0.367	-0.246	-0.028	-0.060	-0.080
347.5	0.307	0.157	0.040	0.099	0.015	-0.189	-0.360	-0.247	-0.029	-0.056	-0.078
348.9	0.307	0.158	0.042	0.098	0.014	-0.192	-0.350	-0.259	-0.024	-0.049	-0.079
350.3	0.307	0.156	0.044	0.095	0.015	-0.196	-0.350	-0.270	-0.018	-0.041	-0.077
351.7	0.308	0.156	0.042	0.094	0.014	-0.198	-0.341	-0.274	-0.009	-0.039	-0.077
353.1	0.309	0.159	0.041	0.095	0.012	-0.197	-0.332	-0.273	0.002	-0.033	-0.070
354.5	0.310	0.161	0.043	0.095	0.012	-0.196	-0.323	-0.266	0.012	-0.022	-0.065
355.9	0.314	0.160	0.044	0.095	0.011	-0.200	-0.310	-0.265	0.032	-0.012	-0.059
357.3	0.314	0.162	0.046	0.097	0.011	-0.201	-0.304	-0.261	0.044	-0.005	-0.051
358.7	0.315	0.168	0.050	0.105	0.012	-0.201	-0.298	-0.256	0.057	0.000	-0.047

Table 20. Modified unsteady pressure coefficients around the body at x/l = 0.90. C_T/σ = 0.0656, μ = 0.151, α_s = -3.0°, θ = 10.3°, A_1 = −2.7°, B_1 = 2.4°.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.045	-0.035	-0.077	-0.151	-0.203	-0.288	-0.384	-0.259	-0.140	-0.133
1.5	0.045	-0.029	-0.073	-0.143	-0.194	-0.272	-0.376	-0.253	-0.137	-0.132
2.9	0.046	-0.029	-0.066	-0.141	-0.194	-0.263	-0.370	-0.248	-0.127	-0.132
4.3	0.048	-0.030	-0.063	-0.139	-0.184	-0.264	-0.367	-0.250	-0.129	-0.132
5.8	0.050	-0.027	-0.066	-0.141	-0.177	-0.259	-0.357	-0.250	-0.129	-0.132
7.2	0.048	-0.030	-0.068	-0.141	-0.169	-0.245	-0.345	-0.243	-0.126	-0.131
8.6	0.051	-0.033	-0.066	-0.135	-0.164	-0.238	-0.339	-0.241	-0.123	-0.131
10.0	0.053	-0.030	-0.067	-0.136	-0.162	-0.235	-0.329	-0.245	-0.125	-0.130
11.4	0.058	-0.030	-0.070	-0.138	-0.151	-0.220	-0.321	-0.252	-0.131	-0.130
12.8	0.060	-0.034	-0.069	-0.141	-0.147	-0.211	-0.313	-0.248	-0.134	-0.130
14.2	0.053	-0.036	-0.075	-0.142	-0.140	-0.201	-0.305	-0.244	-0.139	-0.131
15.6	0.055	-0.037	-0.078	-0.145	-0.127	-0.176	-0.292	-0.242	-0.135	-0.131
17.0	0.056	-0.040	-0.078	-0.145	-0.112	-0.152	-0.266	-0.235	-0.128	-0.131
18.4	0.055	-0.044	-0.080	-0.143	-0.100	-0.132	-0.242	-0.228	-0.122	-0.131
19.8	0.054	-0.044	-0.074	-0.139	-0.085	-0.113	-0.219	-0.220	-0.120	-0.131
21.2	0.056	-0.043	-0.071	-0.135	-0.068	-0.084	-0.194	-0.212	-0.118	-0.131
22.6	0.059	-0.043	-0.068	-0.129	-0.058	-0.061	-0.165	-0.196	-0.106	-0.130
24.0	0.059	-0.037	-0.062	-0.125	-0.054	-0.054	-0.142	-0.183	-0.097	-0.130
25.4	0.057	-0.034	-0.064	-0.126	-0.046	-0.036	-0.123	-0.173	-0.093	-0.130
26.8	0.058	-0.034	-0.067	-0.126	-0.043	-0.018	-0.098	-0.155	-0.081	-0.129
28.3	0.059	-0.033	-0.070	-0.131	-0.048	-0.014	-0.085	-0.139	-0.069	-0.129
29.7	0.057	-0.040	-0.080	-0.143	-0.073	-0.028	-0.082	-0.123	-0.059	-0.129
31.1	0.057	-0.052	-0.090	-0.159	-0.104	-0.065	-0.098	-0.117	-0.049	-0.128
32.5	0.055	-0.065	-0.110	-0.178	-0.124	-0.075	-0.110	-0.115	-0.044	-0.128
33.9	0.054	-0.080	-0.128	-0.193	-0.127	-0.077	-0.103	-0.124	-0.044	-0.127
35.3	0.055	-0.088	-0.130	-0.194	-0.134	-0.098	-0.105	-0.120	-0.049	-0.126
36.7	0.049	-0.086	-0.122	-0.194	-0.150	-0.113	-0.113	-0.108	-0.045	-0.125
38.1	0.040	-0.089	-0.132	-0.199	-0.152	-0.111	-0.107	-0.104	-0.030	-0.125
39.5	0.038	-0.089	-0.139	-0.202	-0.159	-0.131	-0.119	-0.087	-0.030	-0.125
40.9	0.038	-0.092	-0.141	-0.208	-0.184	-0.160	-0.141	-0.079	-0.018	-0.124
42.3	0.037	-0.096	-0.151	-0.219	-0.205	-0.174	-0.159	-0.091	-0.013	-0.125
43.7	0.032	-0.106	-0.163	-0.235	-0.215	-0.185	-0.174	-0.104	-0.026	-0.125
45.1	0.030	-0.118	-0.165	-0.238	-0.221	-0.193	-0.179	-0.101	-0.033	-0.125
46.5	0.032	-0.116	-0.159	-0.233	-0.223	-0.210	-0.192	-0.086	-0.022	-0.125
47.9	0.030	-0.108	-0.155	-0.230	-0.225	-0.226	-0.205	-0.083	-0.014	-0.124
49.3	0.024	-0.099	-0.150	-0.225	-0.230	-0.233	-0.217	-0.087	-0.018	-0.125
50.8	0.022	-0.097	-0.151	-0.230	-0.242	-0.241	-0.235	-0.095	-0.018	-0.127
52.2	0.023	-0.104	-0.160	-0.238	-0.245	-0.247	-0.253	-0.117	-0.030	-0.128
53.6	0.022	-0.110	-0.163	-0.238	-0.248	-0.268	-0.269	-0.114	-0.041	-0.128
55.0	0.024	-0.107	-0.163	-0.241	-0.262	-0.290	-0.287	-0.105	-0.034	-0.129
56.4	0.023	-0.108	-0.160	-0.239	-0.266	-0.307	-0.303	-0.114	-0.029	-0.129
57.8	0.019	-0.105	-0.160	-0.235	-0.273	-0.319	-0.321	-0.123	-0.032	-0.131
59.2	0.021	-0.101	-0.158	-0.235	-0.278	-0.330	-0.340	-0.133	-0.039	-0.131
60.6	0.019	-0.100	-0.156	-0.232	-0.282	-0.354	-0.359	-0.145	-0.049	-0.131

Table 20. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.018	-0.100	-0.159	-0.234	-0.287	-0.372	-0.384	-0.183	-0.061	-0.131
63.4	0.018	-0.099	-0.156	-0.237	-0.294	-0.377	-0.395	-0.202	-0.088	-0.130
64.8	0.020	-0.098	-0.158	-0.238	-0.299	-0.374	-0.405	-0.202	-0.097	-0.129
66.2	0.021	-0.102	-0.162	-0.241	-0.297	-0.375	-0.410	-0.226	-0.107	-0.128
67.6	0.021	-0.100	-0.163	-0.239	-0.303	-0.380	-0.418	-0.237	-0.125	-0.129
69.0	0.023	-0.101	-0.158	-0.234	-0.297	-0.380	-0.434	-0.245	-0.133	-0.130
70.4	0.024	-0.098	-0.152	-0.229	-0.297	-0.385	-0.438	-0.265	-0.147	-0.132
71.8	0.024	-0.096	-0.145	-0.226	-0.299	-0.393	-0.445	-0.284	-0.166	-0.133
73.3	0.022	-0.091	-0.143	-0.223	-0.296	-0.394	-0.447	-0.296	-0.177	-0.134
74.7	0.021	-0.079	-0.143	-0.222	-0.296	-0.386	-0.446	-0.293	-0.178	-0.135
76.1	0.016	-0.071	-0.129	-0.214	-0.292	-0.381	-0.442	-0.287	-0.173	-0.136
77.5	0.013	-0.071	-0.122	-0.206	-0.285	-0.371	-0.441	-0.280	-0.165	-0.137
78.9	0.017	-0.067	-0.119	-0.204	-0.275	-0.367	-0.446	-0.287	-0.165	-0.138
80.3	0.021	-0.063	-0.113	-0.195	-0.265	-0.364	-0.449	-0.307	-0.181	-0.139
81.7	0.026	-0.061	-0.108	-0.185	-0.254	-0.356	-0.447	-0.321	-0.197	-0.140
83.1	0.027	-0.054	-0.102	-0.179	-0.251	-0.354	-0.448	-0.327	-0.204	-0.140
84.5	0.023	-0.047	-0.101	-0.178	-0.244	-0.349	-0.441	-0.338	-0.214	-0.140
85.9	0.021	-0.045	-0.095	-0.171	-0.232	-0.331	-0.437	-0.326	-0.214	-0.141
87.3	0.022	-0.045	-0.090	-0.164	-0.225	-0.323	-0.429	-0.318	-0.198	-0.142
88.7	0.025	-0.042	-0.088	-0.161	-0.210	-0.311	-0.422	-0.325	-0.203	-0.142
90.1	0.029	-0.039	-0.083	-0.156	-0.201	-0.292	-0.412	-0.320	-0.207	-0.142
91.5	0.031	-0.038	-0.078	-0.150	-0.195	-0.288	-0.404	-0.322	-0.206	-0.143
92.9	0.032	-0.036	-0.075	-0.146	-0.187	-0.282	-0.399	-0.317	-0.203	-0.144
94.3	0.033	-0.035	-0.076	-0.146	-0.174	-0.276	-0.389	-0.307	-0.195	-0.143
95.8	0.033	-0.034	-0.076	-0.144	-0.161	-0.273	-0.381	-0.308	-0.192	-0.144
97.2	0.031	-0.028	-0.076	-0.140	-0.155	-0.271	-0.374	-0.305	-0.192	-0.143
98.6	0.028	-0.027	-0.075	-0.139	-0.146	-0.267	-0.364	-0.302	-0.190	-0.143
100.0	0.034	-0.029	-0.071	-0.134	-0.139	-0.246	-0.355	-0.298	-0.189	-0.142
101.4	0.038	-0.029	-0.067	-0.134	-0.134	-0.233	-0.339	-0.285	-0.180	-0.142
102.8	0.039	-0.029	-0.066	-0.134	-0.124	-0.218	-0.322	-0.273	-0.168	-0.141
104.2	0.040	-0.032	-0.068	-0.133	-0.111	-0.197	-0.307	-0.266	-0.161	-0.140
105.6	0.039	-0.039	-0.069	-0.135	-0.100	-0.178	-0.288	-0.258	-0.156	-0.140
107.0	0.038	-0.035	-0.072	-0.133	-0.088	-0.150	-0.266	-0.251	-0.149	-0.139
108.4	0.038	-0.032	-0.078	-0.131	-0.072	-0.141	-0.244	-0.248	-0.151	-0.139
109.8	0.043	-0.039	-0.074	-0.126	-0.064	-0.109	-0.222	-0.241	-0.146	-0.137
111.2	0.044	-0.037	-0.071	-0.122	-0.058	-0.084	-0.196	-0.228	-0.136	-0.136
112.6	0.049	-0.037	-0.069	-0.125	-0.047	-0.075	-0.171	-0.214	-0.132	-0.135
114.0	0.048	-0.039	-0.069	-0.125	-0.043	-0.054	-0.142	-0.200	-0.117	-0.135
115.4	0.045	-0.039	-0.071	-0.125	-0.051	-0.035	-0.121	-0.183	-0.107	-0.135
116.8	0.043	-0.041	-0.073	-0.129	-0.059	-0.035	-0.115	-0.169	-0.100	-0.135
118.3	0.044	-0.044	-0.083	-0.141	-0.071	-0.045	-0.112	-0.157	-0.087	-0.135
119.7	0.044	-0.052	-0.091	-0.153	-0.092	-0.064	-0.112	-0.151	-0.075	-0.135
121.1	0.046	-0.061	-0.103	-0.166	-0.111	-0.092	-0.115	-0.148	-0.076	-0.134
122.5	0.045	-0.072	-0.119	-0.178	-0.131	-0.118	-0.127	-0.143	-0.075	-0.133

Table 20. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.042	-0.084	-0.129	-0.192	-0.150	-0.137	-0.139	-0.139	-0.068	-0.133
125.3	0.040	-0.088	-0.140	-0.205	-0.160	-0.145	-0.142	-0.141	-0.071	-0.133
126.7	0.038	-0.094	-0.146	-0.207	-0.161	-0.142	-0.140	-0.138	-0.064	-0.132
128.1	0.033	-0.098	-0.148	-0.207	-0.162	-0.143	-0.137	-0.124	-0.057	-0.131
129.5	0.028	-0.098	-0.142	-0.210	-0.173	-0.161	-0.143	-0.115	-0.056	-0.132
130.9	0.022	-0.100	-0.140	-0.207	-0.182	-0.182	-0.155	-0.111	-0.047	-0.132
132.3	0.015	-0.098	-0.148	-0.211	-0.192	-0.197	-0.162	-0.106	-0.035	-0.133
133.7	0.016	-0.104	-0.154	-0.219	-0.203	-0.209	-0.173	-0.097	-0.033	-0.134
135.1	0.019	-0.105	-0.158	-0.225	-0.216	-0.218	-0.189	-0.093	-0.030	-0.133
136.5	0.018	-0.110	-0.165	-0.232	-0.229	-0.233	-0.206	-0.096	-0.027	-0.132
137.9	0.018	-0.115	-0.171	-0.234	-0.233	-0.244	-0.219	-0.108	-0.032	-0.131
139.3	0.017	-0.117	-0.166	-0.237	-0.230	-0.251	-0.227	-0.096	-0.037	-0.131
140.8	0.016	-0.110	-0.156	-0.231	-0.237	-0.258	-0.245	-0.079	-0.018	-0.132
142.2	0.016	-0.100	-0.152	-0.226	-0.243	-0.272	-0.259	-0.094	-0.010	-0.131
143.6	0.014	-0.103	-0.162	-0.231	-0.248	-0.296	-0.274	-0.107	-0.023	-0.131
145.0	0.018	-0.106	-0.164	-0.236	-0.257	-0.308	-0.291	-0.113	-0.025	-0.132
146.4	0.021	-0.106	-0.160	-0.236	-0.268	-0.311	-0.306	-0.105	-0.022	-0.131
147.8	0.018	-0.101	-0.156	-0.231	-0.279	-0.319	-0.319	-0.109	-0.022	-0.130
149.2	0.016	-0.098	-0.155	-0.236	-0.277	-0.336	-0.332	-0.120	-0.029	-0.131
150.6	0.012	-0.097	-0.157	-0.233	-0.273	-0.339	-0.350	-0.132	-0.029	-0.132
152.0	0.015	-0.091	-0.150	-0.225	-0.276	-0.338	-0.364	-0.150	-0.038	-0.131
153.4	0.018	-0.088	-0.147	-0.225	-0.281	-0.344	-0.375	-0.156	-0.050	-0.129
154.8	0.023	-0.084	-0.148	-0.222	-0.287	-0.350	-0.385	-0.173	-0.062	-0.129
156.2	0.022	-0.080	-0.142	-0.222	-0.285	-0.350	-0.396	-0.192	-0.081	-0.129
157.6	0.020	-0.082	-0.143	-0.221	-0.290	-0.360	-0.413	-0.209	-0.089	-0.130
159.0	0.027	-0.081	-0.140	-0.219	-0.283	-0.371	-0.428	-0.229	-0.104	-0.130
160.4	0.031	-0.082	-0.138	-0.216	-0.283	-0.373	-0.428	-0.249	-0.124	-0.130
161.8	0.027	-0.075	-0.132	-0.211	-0.289	-0.364	-0.421	-0.251	-0.139	-0.131
163.3	0.030	-0.069	-0.126	-0.201	-0.278	-0.366	-0.426	-0.242	-0.128	-0.133
164.7	0.029	-0.066	-0.120	-0.195	-0.273	-0.372	-0.434	-0.247	-0.127	-0.134
166.1	0.031	-0.061	-0.112	-0.189	-0.270	-0.364	-0.432	-0.258	-0.132	-0.135
167.5	0.033	-0.053	-0.107	-0.180	-0.265	-0.360	-0.429	-0.262	-0.137	-0.135
168.9	0.033	-0.043	-0.096	-0.176	-0.251	-0.355	-0.432	-0.270	-0.147	-0.137
170.3	0.032	-0.036	-0.091	-0.171	-0.242	-0.348	-0.430	-0.283	-0.157	-0.137
171.7	0.035	-0.035	-0.092	-0.164	-0.237	-0.338	-0.427	-0.281	-0.161	-0.137
173.1	0.038	-0.035	-0.084	-0.159	-0.226	-0.331	-0.424	-0.281	-0.158	-0.138
174.5	0.041	-0.031	-0.079	-0.155	-0.219	-0.324	-0.423	-0.287	-0.159	-0.139
175.9	0.040	-0.031	-0.076	-0.151	-0.212	-0.322	-0.420	-0.290	-0.168	-0.139
177.3	0.045	-0.031	-0.072	-0.143	-0.201	-0.310	-0.415	-0.294	-0.172	-0.139
178.7	0.046	-0.025	-0.071	-0.141	-0.189	-0.300	-0.413	-0.302	-0.174	-0.140
180.1	0.049	-0.025	-0.068	-0.137	-0.184	-0.289	-0.407	-0.301	-0.186	-0.139
181.5	0.049	-0.026	-0.071	-0.135	-0.176	-0.274	-0.399	-0.295	-0.178	-0.139
182.9	0.044	-0.022	-0.066	-0.131	-0.165	-0.272	-0.390	-0.297	-0.175	-0.138
184.3	0.042	-0.021	-0.069	-0.128	-0.156	-0.271	-0.382	-0.295	-0.177	-0.138

Table 20. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.045	-0.024	-0.063	-0.129	-0.149	-0.265	-0.372	-0.290	-0.170	-0.138
187.2	0.047	-0.024	-0.057	-0.127	-0.139	-0.249	-0.357	-0.286	-0.169	-0.138
188.6	0.047	-0.018	-0.056	-0.123	-0.127	-0.233	-0.343	-0.277	-0.160	-0.138
190.0	0.049	-0.020	-0.057	-0.123	-0.123	-0.209	-0.326	-0.265	-0.150	-0.137
191.4	0.046	-0.023	-0.063	-0.121	-0.112	-0.203	-0.315	-0.259	-0.152	-0.137
192.8	0.047	-0.024	-0.060	-0.120	-0.100	-0.190	-0.306	-0.261	-0.146	-0.137
194.2	0.046	-0.025	-0.059	-0.121	-0.086	-0.163	-0.287	-0.261	-0.147	-0.136
195.6	0.044	-0.022	-0.058	-0.120	-0.070	-0.145	-0.263	-0.251	-0.146	-0.136
197.0	0.047	-0.024	-0.055	-0.111	-0.054	-0.110	-0.243	-0.243	-0.139	-0.136
198.4	0.049	-0.025	-0.053	-0.108	-0.048	-0.091	-0.216	-0.227	-0.130	-0.136
199.8	0.050	-0.017	-0.053	-0.109	-0.040	-0.079	-0.194	-0.217	-0.123	-0.136
201.2	0.051	-0.017	-0.054	-0.108	-0.030	-0.050	-0.170	-0.205	-0.115	-0.135
202.6	0.047	-0.026	-0.054	-0.104	-0.019	-0.025	-0.142	-0.193	-0.109	-0.135
204.0	0.049	-0.027	-0.054	-0.102	-0.007	-0.006	-0.114	-0.177	-0.100	-0.134
205.4	0.053	-0.022	-0.048	-0.101	-0.007	0.016	-0.095	-0.161	-0.090	-0.134
206.8	0.054	-0.024	-0.049	-0.104	-0.014	0.023	-0.078	-0.145	-0.080	-0.134
208.3	0.054	-0.031	-0.059	-0.113	-0.028	0.020	-0.064	-0.130	-0.067	-0.134
209.7	0.054	-0.040	-0.065	-0.121	-0.051	-0.006	-0.065	-0.120	-0.056	-0.134
211.1	0.051	-0.046	-0.079	-0.139	-0.082	-0.053	-0.091	-0.107	-0.042	-0.133
212.5	0.051	-0.057	-0.105	-0.166	-0.105	-0.072	-0.112	-0.109	-0.035	-0.132
213.9	0.051	-0.073	-0.120	-0.182	-0.109	-0.065	-0.102	-0.120	-0.038	-0.131
215.3	0.048	-0.084	-0.128	-0.190	-0.113	-0.055	-0.089	-0.122	-0.049	-0.130
216.7	0.047	-0.090	-0.126	-0.187	-0.117	-0.056	-0.084	-0.108	-0.045	-0.129
218.1	0.042	-0.089	-0.125	-0.185	-0.126	-0.083	-0.095	-0.081	-0.032	-0.128
219.5	0.036	-0.088	-0.126	-0.190	-0.143	-0.108	-0.112	-0.069	-0.015	-0.128
220.9	0.034	-0.089	-0.127	-0.196	-0.160	-0.119	-0.123	-0.071	-0.001	-0.128
222.3	0.030	-0.091	-0.138	-0.205	-0.170	-0.144	-0.137	-0.071	-0.003	-0.128
223.7	0.031	-0.095	-0.148	-0.213	-0.187	-0.170	-0.161	-0.068	-0.004	-0.128
225.1	0.036	-0.099	-0.149	-0.219	-0.208	-0.187	-0.183	-0.064	0.001	-0.126
226.5	0.034	-0.105	-0.150	-0.223	-0.213	-0.204	-0.201	-0.073	0.007	-0.125
227.9	0.034	-0.110	-0.158	-0.228	-0.216	-0.214	-0.214	-0.079	0.000	-0.124
229.3	0.033	-0.110	-0.160	-0.233	-0.229	-0.224	-0.234	-0.076	-0.007	-0.124
230.8	0.031	-0.108	-0.163	-0.236	-0.235	-0.249	-0.258	-0.077	-0.003	-0.124
232.2	0.030	-0.105	-0.161	-0.235	-0.245	-0.263	-0.282	-0.090	0.000	-0.125
233.6	0.030	-0.105	-0.165	-0.237	-0.262	-0.276	-0.293	-0.103	-0.015	-0.125
235.0	0.030	-0.112	-0.166	-0.239	-0.262	-0.287	-0.298	-0.104	-0.026	-0.125
236.4	0.028	-0.111	-0.162	-0.239	-0.264	-0.301	-0.321	-0.098	-0.013	-0.126
237.8	0.025	-0.112	-0.160	-0.241	-0.269	-0.312	-0.333	-0.114	-0.017	-0.126
239.2	0.023	-0.107	-0.159	-0.240	-0.276	-0.312	-0.345	-0.119	-0.023	-0.127
240.6	0.021	-0.108	-0.166	-0.241	-0.282	-0.317	-0.363	-0.126	-0.025	-0.126
242.0	0.021	-0.110	-0.159	-0.239	-0.288	-0.327	-0.382	-0.137	-0.036	-0.126
243.4	0.020	-0.108	-0.160	-0.236	-0.290	-0.333	-0.392	-0.163	-0.050	-0.127
244.8	0.021	-0.104	-0.157	-0.234	-0.288	-0.343	-0.401	-0.184	-0.073	-0.127
246.2	0.021	-0.102	-0.156	-0.235	-0.285	-0.352	-0.406	-0.183	-0.077	-0.128

Table 20. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.019	-0.104	-0.156	-0.236	-0.283	-0.367	-0.414	-0.192	-0.082	-0.129
249.0	0.019	-0.099	-0.148	-0.226	-0.281	-0.365	-0.418	-0.211	-0.095	-0.130
250.4	0.016	-0.097	-0.144	-0.221	-0.280	-0.364	-0.422	-0.215	-0.099	-0.131
251.8	0.017	-0.087	-0.142	-0.218	-0.279	-0.380	-0.430	-0.232	-0.109	-0.133
253.3	0.015	-0.080	-0.132	-0.214	-0.277	-0.375	-0.435	-0.240	-0.119	-0.134
254.7	0.015	-0.075	-0.117	-0.203	-0.271	-0.377	-0.438	-0.247	-0.120	-0.135
256.1	0.015	-0.072	-0.117	-0.192	-0.269	-0.385	-0.437	-0.252	-0.128	-0.136
257.5	0.016	-0.060	-0.109	-0.186	-0.260	-0.387	-0.437	-0.254	-0.131	-0.136
258.9	0.026	-0.053	-0.099	-0.181	-0.248	-0.382	-0.431	-0.269	-0.143	-0.137
260.3	0.029	-0.048	-0.097	-0.177	-0.246	-0.370	-0.429	-0.267	-0.154	-0.137
261.7	0.029	-0.042	-0.093	-0.168	-0.235	-0.353	-0.423	-0.268	-0.155	-0.137
263.1	0.030	-0.042	-0.087	-0.162	-0.228	-0.336	-0.417	-0.269	-0.146	-0.137
264.5	0.037	-0.035	-0.081	-0.158	-0.215	-0.315	-0.417	-0.276	-0.148	-0.137
265.9	0.042	-0.032	-0.082	-0.154	-0.204	-0.302	-0.412	-0.284	-0.160	-0.137
267.3	0.043	-0.035	-0.077	-0.151	-0.199	-0.303	-0.401	-0.284	-0.162	-0.136
268.7	0.044	-0.029	-0.069	-0.146	-0.188	-0.284	-0.393	-0.278	-0.159	-0.135
270.1	0.044	-0.028	-0.069	-0.143	-0.179	-0.281	-0.389	-0.273	-0.156	-0.135
271.5	0.043	-0.026	-0.065	-0.140	-0.176	-0.287	-0.381	-0.271	-0.154	-0.135
272.9	0.043	-0.025	-0.065	-0.133	-0.167	-0.279	-0.375	-0.275	-0.155	-0.135
274.3	0.047	-0.027	-0.064	-0.130	-0.158	-0.278	-0.373	-0.288	-0.166	-0.136
275.8	0.045	-0.025	-0.060	-0.131	-0.150	-0.275	-0.364	-0.294	-0.170	-0.136
277.2	0.044	-0.027	-0.062	-0.133	-0.146	-0.262	-0.355	-0.291	-0.175	-0.135
278.6	0.046	-0.025	-0.062	-0.133	-0.137	-0.253	-0.343	-0.283	-0.169	-0.134
280.0	0.045	-0.028	-0.060	-0.127	-0.128	-0.232	-0.323	-0.269	-0.160	-0.134
281.4	0.049	-0.029	-0.053	-0.127	-0.124	-0.213	-0.307	-0.259	-0.154	-0.134
282.8	0.052	-0.027	-0.061	-0.132	-0.108	-0.203	-0.295	-0.249	-0.145	-0.134
284.2	0.048	-0.035	-0.066	-0.133	-0.106	-0.189	-0.283	-0.249	-0.146	-0.136
285.6	0.049	-0.036	-0.071	-0.136	-0.104	-0.168	-0.270	-0.246	-0.142	-0.136
287.0	0.048	-0.040	-0.075	-0.138	-0.091	-0.146	-0.252	-0.242	-0.139	-0.136
288.4	0.044	-0.047	-0.079	-0.138	-0.081	-0.122	-0.229	-0.236	-0.139	-0.136
289.8	0.042	-0.048	-0.078	-0.136	-0.068	-0.094	-0.199	-0.223	-0.126	-0.135
291.2	0.039	-0.047	-0.071	-0.132	-0.055	-0.068	-0.171	-0.210	-0.123	-0.135
292.6	0.041	-0.044	-0.072	-0.129	-0.046	-0.050	-0.148	-0.197	-0.116	-0.135
294.0	0.041	-0.043	-0.071	-0.126	-0.047	-0.039	-0.124	-0.185	-0.101	-0.136
295.4	0.036	-0.045	-0.072	-0.128	-0.047	-0.030	-0.101	-0.168	-0.094	-0.136
296.8	0.036	-0.050	-0.079	-0.136	-0.048	-0.023	-0.079	-0.154	-0.080	-0.136
298.3	0.037	-0.058	-0.085	-0.143	-0.067	-0.037	-0.076	-0.147	-0.071	-0.136
299.7	0.038	-0.062	-0.097	-0.158	-0.096	-0.058	-0.092	-0.132	-0.067	-0.135
301.1	0.031	-0.075	-0.118	-0.177	-0.118	-0.070	-0.101	-0.126	-0.053	-0.135
302.5	0.033	-0.088	-0.123	-0.191	-0.128	-0.078	-0.097	-0.133	-0.052	-0.133
303.9	0.035	-0.095	-0.130	-0.197	-0.128	-0.077	-0.091	-0.132	-0.055	-0.132
305.3	0.031	-0.102	-0.136	-0.199	-0.133	-0.085	-0.092	-0.122	-0.052	-0.131
306.7	0.030	-0.108	-0.135	-0.202	-0.140	-0.105	-0.092	-0.104	-0.042	-0.130
308.1	0.024	-0.102	-0.133	-0.205	-0.144	-0.111	-0.097	-0.088	-0.025	-0.130

Table 20. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.021	-0.100	-0.137	-0.203	-0.160	-0.133	-0.104	-0.077	-0.014	-0.130
310.9	0.019	-0.101	-0.139	-0.207	-0.176	-0.145	-0.119	-0.066	-0.004	-0.129
312.3	0.017	-0.103	-0.149	-0.220	-0.191	-0.163	-0.144	-0.069	-0.002	-0.129
313.7	0.016	-0.113	-0.164	-0.233	-0.205	-0.196	-0.160	-0.082	-0.007	-0.129
315.1	0.015	-0.119	-0.171	-0.242	-0.218	-0.205	-0.174	-0.091	-0.016	-0.128
316.5	0.022	-0.126	-0.175	-0.246	-0.231	-0.208	-0.198	-0.087	-0.022	-0.127
317.9	0.020	-0.130	-0.171	-0.247	-0.238	-0.226	-0.209	-0.081	-0.010	-0.126
319.3	0.018	-0.128	-0.174	-0.250	-0.237	-0.230	-0.221	-0.082	-0.010	-0.126
320.8	0.017	-0.130	-0.179	-0.250	-0.246	-0.235	-0.233	-0.081	-0.017	-0.126
322.2	0.013	-0.124	-0.168	-0.244	-0.252	-0.254	-0.254	-0.075	-0.003	-0.126
323.6	0.014	-0.115	-0.164	-0.245	-0.258	-0.274	-0.281	-0.091	-0.006	-0.127
325.0	0.013	-0.117	-0.171	-0.249	-0.270	-0.295	-0.298	-0.112	-0.021	-0.128
326.4	0.016	-0.117	-0.171	-0.252	-0.282	-0.312	-0.303	-0.109	-0.026	-0.129
327.8	0.016	-0.120	-0.172	-0.252	-0.282	-0.321	-0.317	-0.099	-0.021	-0.128
329.2	0.013	-0.119	-0.165	-0.252	-0.281	-0.332	-0.343	-0.107	-0.012	-0.128
330.6	0.014	-0.117	-0.163	-0.253	-0.296	-0.347	-0.360	-0.140	-0.029	-0.129
332.0	0.013	-0.116	-0.165	-0.253	-0.302	-0.353	-0.374	-0.155	-0.051	-0.129
333.4	0.013	-0.119	-0.171	-0.252	-0.304	-0.365	-0.383	-0.158	-0.054	-0.128
334.8	0.017	-0.122	-0.175	-0.257	-0.306	-0.368	-0.400	-0.172	-0.057	-0.127
336.2	0.017	-0.118	-0.168	-0.253	-0.312	-0.369	-0.410	-0.193	-0.081	-0.128
337.6	0.017	-0.111	-0.162	-0.248	-0.305	-0.363	-0.409	-0.201	-0.093	-0.129
339.0	0.017	-0.107	-0.160	-0.247	-0.303	-0.359	-0.412	-0.203	-0.093	-0.129
340.4	0.017	-0.103	-0.156	-0.242	-0.301	-0.361	-0.423	-0.205	-0.093	-0.131
341.8	0.023	-0.101	-0.151	-0.233	-0.297	-0.360	-0.432	-0.225	-0.105	-0.131
343.3	0.020	-0.093	-0.143	-0.224	-0.296	-0.361	-0.430	-0.235	-0.117	-0.131
344.7	0.021	-0.085	-0.131	-0.215	-0.295	-0.360	-0.431	-0.240	-0.120	-0.132
346.1	0.023	-0.080	-0.126	-0.212	-0.289	-0.367	-0.432	-0.243	-0.123	-0.131
347.5	0.023	-0.068	-0.121	-0.205	-0.277	-0.360	-0.431	-0.240	-0.125	-0.131
348.9	0.027	-0.059	-0.111	-0.198	-0.274	-0.350	-0.438	-0.257	-0.131	-0.131
350.3	0.026	-0.056	-0.103	-0.190	-0.263	-0.350	-0.438	-0.274	-0.144	-0.132
351.7	0.030	-0.055	-0.103	-0.184	-0.260	-0.341	-0.429	-0.273	-0.156	-0.132
353.1	0.037	-0.052	-0.100	-0.180	-0.255	-0.332	-0.423	-0.271	-0.155	-0.132
354.5	0.041	-0.048	-0.096	-0.174	-0.240	-0.323	-0.417	-0.267	-0.149	-0.132
355.9	0.043	-0.048	-0.091	-0.169	-0.231	-0.310	-0.407	-0.263	-0.142	-0.133
357.3	0.046	-0.044	-0.084	-0.163	-0.221	-0.304	-0.399	-0.259	-0.144	-0.134
358.7	0.045	-0.038	-0.079	-0.157	-0.213	-0.298	-0.391	-0.260	-0.143	-0.134

Table 21. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0819$, $\mu = 0.151$, $\alpha_s = -3.0°$, $\theta = 12.0°$, $A_1 = -2.9°$, $B_1 = 2.5°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.331	0.193	0.092	0.140	0.077	-0.187	-0.295	-0.232	0.034	-0.013	-0.047
1.5	0.333	0.197	0.094	0.145	0.077	-0.189	-0.286	-0.232	0.054	0.000	-0.042
2.9	0.337	0.201	0.102	0.152	0.079	-0.186	-0.273	-0.229	0.081	0.016	-0.032
4.3	0.344	0.214	0.113	0.159	0.083	-0.186	-0.259	-0.229	0.106	0.028	-0.023
5.8	0.357	0.223	0.123	0.167	0.089	-0.188	-0.252	-0.236	0.124	0.043	-0.015
7.2	0.366	0.233	0.136	0.179	0.094	-0.187	-0.245	-0.240	0.142	0.061	-0.006
8.6	0.373	0.251	0.151	0.195	0.099	-0.182	-0.235	-0.241	0.166	0.089	0.006
10.0	0.389	0.264	0.165	0.209	0.102	-0.185	-0.229	-0.239	0.191	0.112	0.021
11.4	0.402	0.279	0.181	0.221	0.105	-0.190	-0.217	-0.235	0.222	0.137	0.036
12.8	0.416	0.296	0.199	0.234	0.106	-0.192	-0.203	-0.234	0.259	0.165	0.052
14.2	0.434	0.319	0.211	0.245	0.108	-0.188	-0.194	-0.237	0.285	0.189	0.064
15.6	0.454	0.342	0.230	0.262	0.114	-0.185	-0.181	-0.234	0.326	0.221	0.080
17.0	0.477	0.362	0.251	0.277	0.122	-0.190	-0.165	-0.234	0.363	0.249	0.100
18.4	0.494	0.383	0.269	0.295	0.121	-0.188	-0.154	-0.235	0.396	0.287	0.127
19.8	0.515	0.409	0.298	0.319	0.123	-0.188	-0.134	-0.228	0.420	0.328	0.157
21.2	0.541	0.441	0.328	0.340	0.128	-0.194	-0.098	-0.213	0.433	0.362	0.173
22.6	0.566	0.470	0.351	0.356	0.130	-0.197	-0.064	-0.195	0.469	0.393	0.190
24.0	0.590	0.503	0.372	0.371	0.129	-0.195	-0.041	-0.177	0.505	0.421	0.208
25.4	0.619	0.535	0.398	0.392	0.135	-0.192	-0.013	-0.155	0.522	0.446	0.213
26.8	0.648	0.565	0.423	0.410	0.145	-0.188	0.011	-0.138	0.553	0.461	0.212
28.3	0.675	0.594	0.445	0.428	0.152	-0.182	0.023	-0.118	0.561	0.459	0.209
29.7	0.700	0.621	0.470	0.450	0.154	-0.183	0.032	-0.095	0.533	0.454	0.201
31.1	0.720	0.647	0.496	0.471	0.159	-0.186	0.022	-0.073	0.514	0.458	0.194
32.5	0.739	0.671	0.518	0.490	0.164	-0.190	-0.016	-0.053	0.489	0.443	0.189
33.9	0.759	0.697	0.544	0.508	0.168	-0.194	-0.064	-0.043	0.446	0.418	0.176
35.3	0.775	0.719	0.558	0.516	0.171	-0.190	-0.093	-0.050	0.407	0.382	0.158
36.7	0.789	0.730	0.561	0.522	0.167	-0.185	-0.095	-0.063	0.378	0.352	0.154
38.1	0.793	0.731	0.568	0.529	0.169	-0.182	-0.102	-0.066	0.348	0.322	0.143
39.5	0.791	0.729	0.569	0.525	0.171	-0.182	-0.118	-0.063	0.310	0.279	0.110
40.9	0.786	0.723	0.558	0.515	0.168	-0.184	-0.131	-0.052	0.274	0.232	0.108
42.3	0.776	0.713	0.548	0.512	0.167	-0.180	-0.150	-0.034	0.244	0.182	0.065
43.7	0.764	0.697	0.540	0.508	0.167	-0.175	-0.153	-0.025	0.195	0.178	-0.017
45.1	0.745	0.670	0.524	0.491	0.168	-0.173	-0.164	-0.024	0.163	0.127	-0.041
46.5	0.720	0.645	0.501	0.478	0.171	-0.165	-0.189	-0.023	0.143	0.065	-0.034
47.9	0.693	0.620	0.478	0.461	0.168	-0.157	-0.201	-0.036	0.113	0.054	-0.032
49.3	0.668	0.586	0.455	0.445	0.164	-0.156	-0.198	-0.045	0.090	0.035	-0.039
50.8	0.639	0.552	0.431	0.429	0.160	-0.151	-0.201	-0.036	0.083	0.057	-0.044
52.2	0.608	0.521	0.408	0.405	0.155	-0.150	-0.205	-0.028	0.078	0.076	-0.020
53.6	0.583	0.492	0.379	0.386	0.155	-0.148	-0.217	-0.023	0.071	0.076	-0.021
55.0	0.558	0.467	0.350	0.365	0.149	-0.146	-0.232	-0.016	0.062	0.050	-0.027
56.4	0.537	0.438	0.326	0.343	0.139	-0.153	-0.236	-0.027	0.039	0.005	-0.033
57.8	0.516	0.406	0.299	0.325	0.131	-0.156	-0.259	-0.047	0.012	-0.013	-0.026
59.2	0.490	0.382	0.275	0.306	0.128	-0.154	-0.284	-0.050	-0.022	-0.020	-0.032
60.6	0.470	0.359	0.254	0.286	0.127	-0.156	-0.298	-0.065	-0.041	-0.029	-0.051

Table 21. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.453	0.335	0.233	0.265	0.118	-0.161	-0.310	-0.092	-0.050	-0.036	-0.063
63.4	0.434	0.315	0.213	0.249	0.108	-0.161	-0.311	-0.115	-0.062	-0.054	-0.073
64.8	0.416	0.298	0.195	0.234	0.104	-0.165	-0.324	-0.131	-0.078	-0.071	-0.077
66.2	0.403	0.279	0.180	0.219	0.103	-0.172	-0.346	-0.152	-0.090	-0.080	-0.075
67.6	0.388	0.262	0.165	0.205	0.100	-0.174	-0.353	-0.175	-0.096	-0.081	-0.075
69.0	0.375	0.249	0.151	0.191	0.097	-0.176	-0.353	-0.183	-0.102	-0.077	-0.083
70.4	0.366	0.240	0.138	0.185	0.096	-0.178	-0.358	-0.198	-0.105	-0.079	-0.086
71.8	0.358	0.229	0.129	0.178	0.096	-0.184	-0.359	-0.218	-0.105	-0.086	-0.090
73.3	0.349	0.218	0.121	0.167	0.092	-0.187	-0.362	-0.238	-0.114	-0.082	-0.090
74.7	0.341	0.209	0.111	0.161	0.086	-0.188	-0.369	-0.252	-0.113	-0.081	-0.092
76.1	0.334	0.200	0.103	0.156	0.087	-0.190	-0.374	-0.254	-0.120	-0.094	-0.089
77.5	0.329	0.194	0.100	0.149	0.089	-0.199	-0.374	-0.254	-0.125	-0.101	-0.083
78.9	0.323	0.188	0.093	0.142	0.082	-0.205	-0.366	-0.259	-0.118	-0.102	-0.082
80.3	0.319	0.187	0.086	0.138	0.078	-0.204	-0.364	-0.263	-0.107	-0.101	-0.087
81.7	0.317	0.184	0.085	0.139	0.082	-0.213	-0.361	-0.264	-0.102	-0.096	-0.088
83.1	0.315	0.180	0.087	0.138	0.082	-0.218	-0.356	-0.270	-0.101	-0.089	-0.087
84.5	0.313	0.180	0.085	0.133	0.077	-0.218	-0.352	-0.275	-0.089	-0.079	-0.090
85.9	0.314	0.179	0.081	0.130	0.073	-0.220	-0.346	-0.276	-0.067	-0.072	-0.087
87.3	0.314	0.179	0.079	0.132	0.076	-0.220	-0.333	-0.275	-0.044	-0.058	-0.086
88.7	0.314	0.178	0.082	0.131	0.080	-0.225	-0.325	-0.276	-0.036	-0.039	-0.076
90.1	0.313	0.178	0.083	0.131	0.080	-0.225	-0.312	-0.273	-0.017	-0.024	-0.061
91.5	0.314	0.178	0.083	0.140	0.077	-0.223	-0.302	-0.268	0.009	-0.010	-0.053
92.9	0.318	0.184	0.092	0.145	0.081	-0.226	-0.294	-0.270	0.031	-0.001	-0.045
94.3	0.323	0.193	0.103	0.154	0.084	-0.225	-0.281	-0.268	0.063	0.017	-0.030
95.8	0.331	0.204	0.115	0.161	0.084	-0.223	-0.271	-0.267	0.102	0.036	-0.023
97.2	0.341	0.218	0.123	0.172	0.091	-0.217	-0.258	-0.264	0.135	0.058	-0.012
98.6	0.352	0.228	0.137	0.186	0.098	-0.209	-0.246	-0.259	0.163	0.084	0.000
100.0	0.363	0.239	0.155	0.197	0.102	-0.207	-0.237	-0.260	0.196	0.105	0.013
101.4	0.375	0.260	0.168	0.209	0.102	-0.204	-0.225	-0.255	0.231	0.134	0.032
102.8	0.397	0.284	0.177	0.217	0.103	-0.205	-0.216	-0.245	0.259	0.158	0.044
104.2	0.418	0.300	0.192	0.232	0.107	-0.206	-0.203	-0.241	0.290	0.186	0.056
105.6	0.434	0.316	0.214	0.246	0.112	-0.206	-0.187	-0.239	0.322	0.219	0.078
107.0	0.450	0.338	0.228	0.255	0.111	-0.204	-0.168	-0.234	0.352	0.248	0.100
108.4	0.470	0.361	0.247	0.277	0.116	-0.200	-0.143	-0.227	0.387	0.275	0.121
109.8	0.495	0.390	0.266	0.289	0.121	-0.203	-0.123	-0.218	0.417	0.308	0.140
111.2	0.523	0.416	0.289	0.301	0.117	-0.205	-0.100	-0.209	0.450	0.343	0.150
112.6	0.545	0.436	0.305	0.320	0.112	-0.208	-0.061	-0.197	0.483	0.373	0.164
114.0	0.558	0.457	0.323	0.329	0.115	-0.206	-0.023	-0.178	0.525	0.398	0.182
115.4	0.580	0.484	0.344	0.337	0.123	-0.201	-0.001	-0.160	0.553	0.420	0.197
116.8	0.606	0.513	0.360	0.351	0.126	-0.199	0.007	-0.143	0.557	0.439	0.202
118.3	0.620	0.526	0.372	0.366	0.127	-0.196	0.006	-0.119	0.555	0.442	0.202
119.7	0.631	0.541	0.384	0.376	0.124	-0.192	0.000	-0.096	0.558	0.427	0.201
121.1	0.650	0.561	0.411	0.393	0.125	-0.192	-0.024	-0.080	0.537	0.410	0.196
122.5	0.661	0.578	0.427	0.406	0.137	-0.192	-0.067	-0.068	0.481	0.405	0.188

Table 21. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.667	0.593	0.435	0.410	0.140	-0.190	-0.112	-0.065	0.442	0.398	0.182
125.3	0.681	0.606	0.443	0.418	0.136	-0.184	-0.123	-0.076	0.412	0.354	0.166
126.7	0.695	0.619	0.455	0.428	0.135	-0.186	-0.120	-0.087	0.386	0.313	0.154
128.1	0.700	0.626	0.468	0.437	0.139	-0.191	-0.132	-0.086	0.354	0.292	0.138
129.5	0.698	0.622	0.469	0.438	0.138	-0.189	-0.159	-0.083	0.317	0.289	0.158
130.9	0.695	0.623	0.462	0.433	0.134	-0.184	-0.170	-0.076	0.285	0.255	0.125
132.3	0.695	0.620	0.456	0.428	0.133	-0.180	-0.162	-0.067	0.254	0.149	0.053
133.7	0.684	0.604	0.457	0.430	0.134	-0.178	-0.166	-0.048	0.244	0.114	0.035
135.1	0.669	0.594	0.444	0.419	0.138	-0.168	-0.188	-0.031	0.222	0.075	0.001
136.5	0.658	0.579	0.427	0.407	0.139	-0.157	-0.205	-0.031	0.174	0.032	-0.012
137.9	0.643	0.557	0.413	0.401	0.136	-0.151	-0.203	-0.035	0.154	0.064	-0.027
139.3	0.621	0.531	0.396	0.394	0.137	-0.144	-0.199	-0.031	0.144	0.081	-0.024
140.8	0.596	0.506	0.381	0.375	0.139	-0.142	-0.198	-0.024	0.149	0.077	0.014
142.2	0.576	0.483	0.360	0.359	0.138	-0.139	-0.212	-0.020	0.144	0.078	0.020
143.6	0.554	0.461	0.341	0.348	0.135	-0.131	-0.227	-0.025	0.127	0.068	0.008
145.0	0.536	0.440	0.321	0.332	0.133	-0.129	-0.235	-0.028	0.106	0.048	0.002
146.4	0.518	0.411	0.297	0.320	0.130	-0.129	-0.249	-0.029	0.091	0.039	0.003
147.8	0.493	0.384	0.280	0.307	0.131	-0.131	-0.269	-0.029	0.073	0.026	-0.006
149.2	0.473	0.362	0.260	0.287	0.131	-0.136	-0.293	-0.044	0.042	-0.008	-0.020
150.6	0.453	0.339	0.237	0.267	0.120	-0.136	-0.304	-0.065	0.017	-0.026	-0.032
152.0	0.436	0.320	0.216	0.253	0.116	-0.136	-0.321	-0.091	0.006	-0.044	-0.040
153.4	0.421	0.302	0.200	0.239	0.118	-0.141	-0.328	-0.113	-0.012	-0.051	-0.045
154.8	0.406	0.282	0.183	0.222	0.118	-0.142	-0.346	-0.143	-0.021	-0.061	-0.061
156.2	0.391	0.266	0.167	0.208	0.116	-0.142	-0.352	-0.166	-0.026	-0.068	-0.066
157.6	0.377	0.250	0.154	0.201	0.113	-0.149	-0.344	-0.172	-0.046	-0.068	-0.056
159.0	0.364	0.235	0.144	0.194	0.116	-0.156	-0.354	-0.182	-0.047	-0.076	-0.066
160.4	0.353	0.226	0.137	0.182	0.117	-0.165	-0.354	-0.194	-0.044	-0.081	-0.072
161.8	0.346	0.219	0.124	0.171	0.110	-0.173	-0.349	-0.200	-0.048	-0.077	-0.073
163.3	0.341	0.209	0.113	0.163	0.110	-0.172	-0.348	-0.204	-0.053	-0.076	-0.078
164.7	0.335	0.198	0.104	0.157	0.111	-0.175	-0.349	-0.214	-0.059	-0.081	-0.082
166.1	0.326	0.192	0.098	0.150	0.108	-0.186	-0.351	-0.222	-0.060	-0.078	-0.084
167.5	0.322	0.185	0.092	0.144	0.101	-0.191	-0.345	-0.224	-0.061	-0.084	-0.083
168.9	0.316	0.179	0.085	0.138	0.099	-0.194	-0.340	-0.220	-0.059	-0.090	-0.086
170.3	0.313	0.178	0.082	0.134	0.096	-0.200	-0.335	-0.224	-0.053	-0.089	-0.090
171.7	0.312	0.174	0.076	0.127	0.095	-0.205	-0.331	-0.240	-0.049	-0.087	-0.093
173.1	0.308	0.171	0.072	0.125	0.092	-0.211	-0.332	-0.253	-0.048	-0.074	-0.091
174.5	0.305	0.166	0.069	0.121	0.093	-0.213	-0.320	-0.258	-0.017	-0.068	-0.089
175.9	0.302	0.163	0.064	0.116	0.091	-0.215	-0.311	-0.259	0.003	-0.065	-0.084
177.3	0.302	0.159	0.064	0.117	0.089	-0.220	-0.305	-0.261	0.006	-0.046	-0.074
178.7	0.299	0.160	0.063	0.116	0.087	-0.222	-0.292	-0.265	0.015	-0.037	-0.072
180.1	0.300	0.164	0.064	0.118	0.084	-0.221	-0.284	-0.265	0.033	-0.027	-0.063
181.5	0.305	0.163	0.067	0.120	0.086	-0.221	-0.266	-0.257	0.063	-0.010	-0.056
182.9	0.305	0.164	0.071	0.121	0.084	-0.226	-0.247	-0.257	0.080	-0.002	-0.044
184.3	0.307	0.171	0.075	0.126	0.084	-0.225	-0.235	-0.260	0.103	0.013	-0.028

Table 21. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.314	0.181	0.081	0.132	0.087	-0.222	-0.230	-0.258	0.142	0.040	-0.016
187.2	0.322	0.190	0.093	0.141	0.092	-0.220	-0.217	-0.258	0.172	0.069	-0.013
188.6	0.329	0.198	0.102	0.149	0.094	-0.219	-0.203	-0.254	0.199	0.093	0.003
190.0	0.338	0.210	0.114	0.160	0.091	-0.221	-0.191	-0.245	0.230	0.121	0.019
191.4	0.348	0.224	0.126	0.172	0.095	-0.220	-0.174	-0.237	0.264	0.147	0.028
192.8	0.363	0.237	0.138	0.179	0.101	-0.219	-0.151	-0.232	0.298	0.174	0.053
194.2	0.376	0.255	0.152	0.187	0.100	-0.214	-0.131	-0.228	0.335	0.205	0.072
195.6	0.393	0.276	0.163	0.198	0.102	-0.209	-0.120	-0.226	0.378	0.236	0.088
197.0	0.414	0.297	0.180	0.216	0.109	-0.207	-0.097	-0.219	0.417	0.268	0.111
198.4	0.434	0.317	0.205	0.235	0.110	-0.203	-0.075	-0.210	0.450	0.304	0.135
199.8	0.456	0.344	0.228	0.250	0.112	-0.207	-0.052	-0.201	0.486	0.338	0.155
201.2	0.484	0.376	0.250	0.268	0.111	-0.211	-0.023	-0.188	0.524	0.373	0.178
202.6	0.511	0.403	0.270	0.282	0.112	-0.206	-0.005	-0.171	0.561	0.413	0.200
204.0	0.534	0.433	0.295	0.299	0.119	-0.203	0.013	-0.150	0.587	0.443	0.220
205.4	0.561	0.462	0.318	0.317	0.118	-0.201	0.036	-0.135	0.617	0.474	0.230
206.8	0.586	0.488	0.336	0.328	0.119	-0.195	0.052	-0.121	0.656	0.502	0.236
208.3	0.607	0.511	0.353	0.342	0.122	-0.191	0.065	-0.103	0.662	0.508	0.243
209.7	0.626	0.531	0.369	0.354	0.129	-0.187	0.077	-0.082	0.653	0.519	0.243
211.1	0.641	0.551	0.385	0.364	0.126	-0.188	0.051	-0.056	0.623	0.515	0.236
212.5	0.655	0.568	0.399	0.376	0.123	-0.189	-0.008	-0.029	0.567	0.490	0.220
213.9	0.666	0.581	0.411	0.386	0.124	-0.185	-0.045	-0.023	0.506	0.464	0.206
215.3	0.672	0.592	0.424	0.393	0.126	-0.183	-0.059	-0.045	0.433	0.429	0.197
216.7	0.677	0.594	0.424	0.393	0.127	-0.182	-0.077	-0.065	0.407	0.409	0.177
218.1	0.675	0.597	0.423	0.391	0.120	-0.180	-0.086	-0.073	0.405	0.368	0.176
219.5	0.673	0.594	0.427	0.400	0.114	-0.177	-0.091	-0.066	0.402	0.315	0.151
220.9	0.666	0.584	0.421	0.394	0.113	-0.181	-0.108	-0.045	0.369	0.287	0.096
222.3	0.656	0.574	0.413	0.382	0.113	-0.181	-0.106	-0.022	0.306	0.229	0.063
223.7	0.644	0.555	0.395	0.373	0.109	-0.176	-0.112	-0.008	0.247	0.139	0.025
225.1	0.629	0.541	0.381	0.363	0.105	-0.167	-0.135	0.000	0.220	0.087	-0.021
226.5	0.611	0.515	0.368	0.359	0.105	-0.157	-0.156	0.000	0.201	0.104	-0.061
227.9	0.591	0.495	0.346	0.341	0.105	-0.151	-0.167	-0.001	0.181	0.118	-0.061
229.3	0.571	0.469	0.333	0.329	0.102	-0.144	-0.186	-0.004	0.181	0.131	-0.039
230.8	0.545	0.443	0.313	0.317	0.102	-0.146	-0.219	-0.010	0.172	0.126	-0.034
232.2	0.523	0.421	0.295	0.303	0.103	-0.144	-0.235	-0.024	0.142	0.090	-0.033
233.6	0.504	0.398	0.277	0.291	0.099	-0.139	-0.254	-0.033	0.129	0.078	-0.032
235.0	0.486	0.376	0.253	0.272	0.098	-0.135	-0.273	-0.037	0.101	0.082	-0.035
236.4	0.468	0.354	0.234	0.260	0.100	-0.132	-0.282	-0.047	0.077	0.071	-0.043
237.8	0.450	0.331	0.219	0.248	0.100	-0.139	-0.307	-0.059	0.059	0.044	-0.053
239.2	0.431	0.309	0.200	0.231	0.095	-0.142	-0.319	-0.075	0.023	0.009	-0.061
240.6	0.415	0.291	0.177	0.215	0.091	-0.141	-0.333	-0.089	-0.010	-0.017	-0.072
242.0	0.400	0.272	0.159	0.199	0.090	-0.144	-0.349	-0.108	-0.031	-0.026	-0.088
243.4	0.387	0.253	0.145	0.186	0.088	-0.146	-0.339	-0.121	-0.045	-0.037	-0.099
244.8	0.371	0.238	0.132	0.176	0.086	-0.151	-0.351	-0.131	-0.061	-0.046	-0.102
246.2	0.357	0.224	0.119	0.167	0.086	-0.154	-0.365	-0.139	-0.067	-0.050	-0.101

Table 21. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.347	0.212	0.110	0.158	0.087	-0.155	-0.377	-0.147	-0.063	-0.053	-0.103
249.0	0.338	0.204	0.103	0.151	0.092	-0.157	-0.365	-0.157	-0.066	-0.049	-0.103
250.4	0.332	0.199	0.097	0.145	0.093	-0.160	-0.357	-0.167	-0.060	-0.050	-0.105
251.8	0.326	0.193	0.092	0.143	0.096	-0.161	-0.363	-0.178	-0.049	-0.052	-0.112
253.3	0.320	0.186	0.087	0.138	0.098	-0.163	-0.354	-0.177	-0.055	-0.051	-0.119
254.7	0.318	0.179	0.080	0.135	0.096	-0.168	-0.349	-0.171	-0.057	-0.058	-0.122
256.1	0.313	0.173	0.072	0.125	0.092	-0.179	-0.353	-0.169	-0.051	-0.063	-0.122
257.5	0.308	0.172	0.065	0.120	0.088	-0.181	-0.358	-0.178	-0.049	-0.061	-0.121
258.9	0.310	0.164	0.063	0.116	0.091	-0.184	-0.358	-0.187	-0.054	-0.063	-0.121
260.3	0.305	0.161	0.059	0.110	0.089	-0.188	-0.358	-0.193	-0.053	-0.063	-0.120
261.7	0.300	0.159	0.054	0.112	0.082	-0.196	-0.354	-0.207	-0.043	-0.054	-0.118
263.1	0.298	0.156	0.055	0.111	0.082	-0.201	-0.344	-0.218	-0.038	-0.045	-0.125
264.5	0.297	0.156	0.055	0.106	0.084	-0.206	-0.343	-0.227	-0.036	-0.039	-0.122
265.9	0.298	0.156	0.052	0.103	0.088	-0.214	-0.338	-0.238	-0.032	-0.031	-0.106
267.3	0.297	0.155	0.047	0.098	0.087	-0.219	-0.330	-0.243	-0.021	-0.025	-0.093
268.7	0.298	0.158	0.046	0.100	0.083	-0.227	-0.318	-0.246	-0.001	-0.018	-0.084
270.1	0.301	0.157	0.051	0.102	0.084	-0.228	-0.303	-0.251	0.027	-0.009	-0.072
271.5	0.304	0.157	0.054	0.103	0.081	-0.231	-0.289	-0.255	0.041	0.003	-0.067
272.9	0.304	0.164	0.058	0.109	0.077	-0.234	-0.276	-0.252	0.065	0.019	-0.063
274.3	0.311	0.171	0.064	0.114	0.080	-0.232	-0.270	-0.256	0.089	0.031	-0.051
275.8	0.319	0.180	0.077	0.125	0.089	-0.229	-0.260	-0.260	0.107	0.049	-0.037
277.2	0.327	0.193	0.090	0.133	0.096	-0.225	-0.242	-0.259	0.134	0.069	-0.029
278.6	0.338	0.205	0.101	0.143	0.101	-0.228	-0.226	-0.259	0.152	0.093	-0.022
280.0	0.348	0.219	0.112	0.159	0.099	-0.227	-0.217	-0.255	0.175	0.118	-0.017
281.4	0.362	0.235	0.130	0.175	0.105	-0.228	-0.203	-0.250	0.209	0.140	-0.008
282.8	0.378	0.252	0.147	0.183	0.110	-0.224	-0.188	-0.246	0.240	0.159	0.008
284.2	0.395	0.270	0.159	0.192	0.103	-0.221	-0.180	-0.244	0.286	0.185	0.022
285.6	0.411	0.290	0.176	0.207	0.111	-0.215	-0.162	-0.239	0.316	0.218	0.036
287.0	0.431	0.311	0.194	0.223	0.123	-0.210	-0.144	-0.232	0.339	0.245	0.055
288.4	0.452	0.335	0.217	0.244	0.119	-0.208	-0.131	-0.220	0.371	0.281	0.079
289.8	0.475	0.364	0.243	0.263	0.117	-0.211	-0.104	-0.206	0.402	0.320	0.103
291.2	0.502	0.392	0.268	0.285	0.120	-0.209	-0.070	-0.196	0.441	0.356	0.123
292.6	0.527	0.420	0.295	0.303	0.126	-0.202	-0.037	-0.184	0.488	0.392	0.141
294.0	0.550	0.454	0.322	0.317	0.124	-0.204	-0.005	-0.162	0.532	0.426	0.158
295.4	0.580	0.488	0.339	0.333	0.121	-0.202	0.015	-0.141	0.557	0.457	0.174
296.8	0.610	0.516	0.361	0.351	0.131	-0.197	0.034	-0.120	0.566	0.481	0.190
298.3	0.632	0.540	0.383	0.369	0.138	-0.190	0.045	-0.097	0.575	0.495	0.201
299.7	0.653	0.561	0.405	0.385	0.138	-0.189	0.024	-0.079	0.569	0.484	0.211
301.1	0.669	0.584	0.425	0.403	0.139	-0.191	-0.001	-0.061	0.536	0.481	0.211
302.5	0.683	0.604	0.442	0.419	0.139	-0.188	-0.020	-0.057	0.502	0.472	0.200
303.9	0.697	0.621	0.465	0.434	0.141	-0.186	-0.033	-0.060	0.505	0.457	0.190
305.3	0.707	0.635	0.473	0.436	0.144	-0.188	-0.041	-0.061	0.517	0.429	0.181
306.7	0.717	0.644	0.474	0.435	0.140	-0.187	-0.053	-0.053	0.485	0.391	0.159
308.1	0.718	0.647	0.477	0.444	0.139	-0.183	-0.077	-0.037	0.424	0.356	0.130

Table 21. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.717	0.647	0.479	0.448	0.139	-0.188	-0.098	-0.029	0.369	0.316	0.120
310.9	0.713	0.633	0.475	0.440	0.137	-0.185	-0.112	-0.024	0.319	0.244	0.096
312.3	0.699	0.620	0.463	0.432	0.129	-0.178	-0.114	-0.021	0.264	0.172	0.081
313.7	0.684	0.611	0.450	0.427	0.128	-0.167	-0.132	-0.019	0.244	0.149	0.033
315.1	0.673	0.591	0.443	0.421	0.134	-0.157	-0.152	-0.015	0.224	0.102	-0.027
316.5	0.654	0.566	0.431	0.409	0.135	-0.154	-0.159	-0.015	0.203	0.103	-0.046
317.9	0.626	0.544	0.404	0.391	0.134	-0.147	-0.175	-0.012	0.209	0.123	-0.025
319.3	0.606	0.518	0.378	0.377	0.128	-0.143	-0.192	-0.016	0.188	0.105	0.001
320.8	0.581	0.485	0.362	0.363	0.124	-0.136	-0.200	-0.020	0.163	0.103	0.007
322.2	0.555	0.458	0.343	0.346	0.124	-0.128	-0.213	-0.019	0.125	0.098	0.010
323.6	0.536	0.436	0.320	0.328	0.122	-0.123	-0.220	-0.023	0.096	0.086	0.018
325.0	0.515	0.414	0.298	0.315	0.121	-0.120	-0.239	-0.030	0.090	0.060	0.004
326.4	0.497	0.391	0.277	0.301	0.121	-0.118	-0.262	-0.034	0.057	0.028	-0.007
327.8	0.481	0.369	0.259	0.285	0.118	-0.120	-0.279	-0.048	0.031	0.008	-0.023
329.2	0.466	0.347	0.238	0.268	0.108	-0.122	-0.304	-0.066	0.007	0.001	-0.048
330.6	0.448	0.329	0.221	0.256	0.102	-0.120	-0.315	-0.077	-0.009	-0.012	-0.056
332.0	0.432	0.314	0.206	0.240	0.101	-0.119	-0.320	-0.091	-0.016	-0.030	-0.049
333.4	0.419	0.294	0.189	0.224	0.098	-0.121	-0.342	-0.117	-0.037	-0.039	-0.054
334.8	0.404	0.279	0.171	0.208	0.093	-0.115	-0.349	-0.148	-0.050	-0.044	-0.067
336.2	0.391	0.265	0.156	0.200	0.090	-0.116	-0.354	-0.156	-0.056	-0.057	-0.070
337.6	0.382	0.249	0.146	0.190	0.089	-0.121	-0.362	-0.157	-0.062	-0.059	-0.072
339.0	0.372	0.238	0.135	0.177	0.086	-0.124	-0.358	-0.164	-0.071	-0.052	-0.074
340.4	0.362	0.232	0.124	0.168	0.085	-0.119	-0.350	-0.169	-0.078	-0.055	-0.073
341.8	0.357	0.222	0.114	0.161	0.090	-0.118	-0.352	-0.173	-0.075	-0.064	-0.068
343.3	0.350	0.211	0.105	0.156	0.093	-0.126	-0.357	-0.174	-0.081	-0.079	-0.068
344.7	0.339	0.201	0.101	0.151	0.090	-0.132	-0.367	-0.190	-0.092	-0.088	-0.071
346.1	0.331	0.194	0.095	0.150	0.081	-0.137	-0.364	-0.195	-0.082	-0.090	-0.080
347.5	0.328	0.191	0.093	0.148	0.079	-0.142	-0.363	-0.192	-0.075	-0.091	-0.085
348.9	0.328	0.190	0.091	0.141	0.079	-0.153	-0.359	-0.196	-0.073	-0.086	-0.089
350.3	0.326	0.188	0.086	0.137	0.078	-0.164	-0.351	-0.201	-0.070	-0.079	-0.096
351.7	0.322	0.186	0.082	0.134	0.076	-0.169	-0.362	-0.218	-0.053	-0.071	-0.093
353.1	0.322	0.187	0.082	0.137	0.077	-0.172	-0.351	-0.228	-0.041	-0.061	-0.096
354.5	0.325	0.185	0.086	0.137	0.078	-0.174	-0.339	-0.232	-0.035	-0.051	-0.094
355.9	0.325	0.184	0.086	0.135	0.076	-0.177	-0.332	-0.237	-0.017	-0.034	-0.080
357.3	0.326	0.189	0.086	0.138	0.077	-0.179	-0.327	-0.238	0.001	-0.028	-0.068
358.7	0.328	0.191	0.089	0.138	0.077	-0.180	-0.317	-0.235	0.015	-0.026	-0.057

Table 22. Modified unsteady pressure coefficients around the body at x/l = 0.90. C_T/σ = 0.0819, μ = 0.151, α_s = -3.0°, θ = 12.0°, A_1 = −2.9°, B_1 = 2.5°.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.081	0.008	-0.026	-0.129	-0.195	-0.295	-0.434	-0.224	-0.123	-0.128
1.5	0.082	0.009	-0.024	-0.123	-0.181	-0.286	-0.427	-0.222	-0.114	-0.127
2.9	0.083	0.010	-0.025	-0.115	-0.171	-0.273	-0.420	-0.217	-0.110	-0.126
4.3	0.085	0.015	-0.014	-0.106	-0.162	-0.259	-0.413	-0.206	-0.105	-0.126
5.8	0.088	0.018	-0.009	-0.104	-0.152	-0.252	-0.409	-0.221	-0.107	-0.125
7.2	0.086	0.022	-0.008	-0.102	-0.146	-0.245	-0.402	-0.225	-0.111	-0.125
8.6	0.086	0.022	-0.009	-0.099	-0.140	-0.235	-0.390	-0.215	-0.106	-0.124
10.0	0.088	0.020	-0.012	-0.103	-0.128	-0.229	-0.381	-0.218	-0.104	-0.124
11.4	0.092	0.017	-0.011	-0.106	-0.121	-0.217	-0.365	-0.210	-0.100	-0.122
12.8	0.094	0.014	-0.019	-0.103	-0.116	-0.203	-0.352	-0.211	-0.101	-0.121
14.2	0.094	0.012	-0.020	-0.100	-0.113	-0.194	-0.345	-0.211	-0.104	-0.121
15.6	0.097	0.008	-0.017	-0.100	-0.104	-0.181	-0.333	-0.212	-0.104	-0.121
17.0	0.096	0.010	-0.020	-0.105	-0.099	-0.165	-0.316	-0.215	-0.107	-0.122
18.4	0.097	0.003	-0.032	-0.114	-0.092	-0.154	-0.294	-0.209	-0.104	-0.122
19.8	0.095	-0.002	-0.038	-0.118	-0.074	-0.134	-0.279	-0.211	-0.106	-0.123
21.2	0.093	-0.008	-0.037	-0.118	-0.056	-0.098	-0.245	-0.195	-0.100	-0.123
22.6	0.094	-0.014	-0.037	-0.110	-0.043	-0.064	-0.201	-0.180	-0.098	-0.123
24.0	0.097	-0.010	-0.030	-0.104	-0.029	-0.041	-0.166	-0.169	-0.092	-0.123
25.4	0.098	-0.007	-0.027	-0.103	-0.010	-0.013	-0.139	-0.150	-0.073	-0.123
26.8	0.092	-0.006	-0.028	-0.100	-0.005	0.011	-0.110	-0.138	-0.060	-0.123
28.3	0.089	-0.001	-0.027	-0.094	-0.001	0.023	-0.076	-0.121	-0.051	-0.124
29.7	0.086	0.000	-0.026	-0.096	0.000	0.032	-0.050	-0.100	-0.036	-0.124
31.1	0.087	-0.007	-0.032	-0.106	-0.019	0.022	-0.038	-0.078	-0.014	-0.124
32.5	0.084	-0.015	-0.047	-0.117	-0.052	-0.016	-0.052	-0.053	0.005	-0.123
33.9	0.081	-0.024	-0.063	-0.136	-0.093	-0.064	-0.080	-0.042	0.017	-0.123
35.3	0.080	-0.039	-0.082	-0.164	-0.122	-0.093	-0.098	-0.049	0.026	-0.121
36.7	0.078	-0.056	-0.106	-0.185	-0.131	-0.095	-0.098	-0.067	0.017	-0.120
38.1	0.077	-0.071	-0.116	-0.193	-0.145	-0.102	-0.104	-0.074	-0.001	-0.119
39.5	0.075	-0.077	-0.115	-0.197	-0.155	-0.118	-0.107	-0.068	0.001	-0.118
40.9	0.071	-0.076	-0.116	-0.202	-0.154	-0.131	-0.109	-0.056	0.005	-0.116
42.3	0.067	-0.078	-0.120	-0.202	-0.166	-0.150	-0.117	-0.040	0.017	-0.116
43.7	0.065	-0.078	-0.117	-0.198	-0.169	-0.153	-0.118	-0.035	0.033	-0.115
45.1	0.063	-0.075	-0.114	-0.200	-0.180	-0.164	-0.127	-0.032	0.036	-0.115
46.5	0.058	-0.073	-0.119	-0.205	-0.200	-0.189	-0.151	-0.028	0.039	-0.116
47.9	0.058	-0.076	-0.119	-0.213	-0.206	-0.201	-0.170	-0.040	0.036	-0.116
49.3	0.062	-0.076	-0.124	-0.216	-0.209	-0.198	-0.171	-0.051	0.020	-0.116
50.8	0.062	-0.076	-0.123	-0.214	-0.209	-0.201	-0.172	-0.045	0.015	-0.115
52.2	0.060	-0.076	-0.118	-0.211	-0.212	-0.205	-0.186	-0.034	0.030	-0.115
53.6	0.064	-0.072	-0.112	-0.207	-0.213	-0.217	-0.193	-0.025	0.037	-0.115
55.0	0.064	-0.064	-0.107	-0.203	-0.216	-0.232	-0.205	-0.013	0.051	-0.116
56.4	0.061	-0.059	-0.105	-0.203	-0.228	-0.236	-0.226	-0.032	0.050	-0.118
57.8	0.060	-0.058	-0.110	-0.203	-0.244	-0.259	-0.249	-0.046	0.032	-0.119
59.2	0.057	-0.059	-0.108	-0.207	-0.249	-0.284	-0.278	-0.044	0.031	-0.119
60.6	0.054	-0.062	-0.111	-0.213	-0.258	-0.298	-0.305	-0.061	0.029	-0.119

Table 22. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.052	-0.067	-0.114	-0.213	-0.271	-0.310	-0.327	-0.088	0.014	-0.119
63.4	0.055	-0.069	-0.115	-0.215	-0.262	-0.311	-0.346	-0.110	-0.011	-0.120
64.8	0.055	-0.065	-0.118	-0.216	-0.270	-0.324	-0.367	-0.118	-0.025	-0.120
66.2	0.058	-0.064	-0.117	-0.215	-0.281	-0.346	-0.388	-0.136	-0.033	-0.120
67.6	0.054	-0.066	-0.113	-0.211	-0.285	-0.353	-0.399	-0.168	-0.063	-0.120
69.0	0.050	-0.063	-0.107	-0.209	-0.287	-0.353	-0.408	-0.175	-0.079	-0.121
70.4	0.053	-0.060	-0.109	-0.211	-0.284	-0.358	-0.426	-0.187	-0.082	-0.122
71.8	0.055	-0.058	-0.104	-0.206	-0.283	-0.359	-0.438	-0.209	-0.096	-0.123
73.3	0.058	-0.056	-0.097	-0.201	-0.275	-0.362	-0.445	-0.229	-0.117	-0.125
74.7	0.060	-0.050	-0.094	-0.198	-0.278	-0.369	-0.454	-0.243	-0.131	-0.126
76.1	0.059	-0.039	-0.088	-0.192	-0.285	-0.374	-0.457	-0.243	-0.135	-0.127
77.5	0.055	-0.032	-0.081	-0.186	-0.274	-0.374	-0.463	-0.245	-0.137	-0.128
78.9	0.054	-0.027	-0.076	-0.180	-0.272	-0.366	-0.468	-0.248	-0.138	-0.128
80.3	0.055	-0.021	-0.064	-0.170	-0.259	-0.364	-0.475	-0.255	-0.150	-0.129
81.7	0.063	-0.013	-0.052	-0.161	-0.249	-0.361	-0.475	-0.264	-0.157	-0.130
83.1	0.067	-0.009	-0.050	-0.154	-0.243	-0.356	-0.470	-0.274	-0.164	-0.131
84.5	0.069	-0.004	-0.048	-0.144	-0.231	-0.352	-0.469	-0.272	-0.170	-0.131
85.9	0.071	0.000	-0.040	-0.142	-0.227	-0.346	-0.468	-0.274	-0.166	-0.132
87.3	0.069	0.003	-0.036	-0.136	-0.215	-0.333	-0.467	-0.277	-0.171	-0.133
88.7	0.067	0.006	-0.030	-0.130	-0.203	-0.325	-0.463	-0.271	-0.169	-0.133
90.1	0.073	0.013	-0.026	-0.128	-0.193	-0.312	-0.459	-0.270	-0.164	-0.134
91.5	0.074	0.018	-0.020	-0.122	-0.179	-0.302	-0.453	-0.268	-0.162	-0.133
92.9	0.073	0.019	-0.017	-0.113	-0.170	-0.294	-0.443	-0.264	-0.162	-0.133
94.3	0.073	0.021	-0.012	-0.105	-0.161	-0.281	-0.434	-0.266	-0.158	-0.133
95.8	0.074	0.023	-0.006	-0.102	-0.157	-0.271	-0.427	-0.261	-0.155	-0.133
97.2	0.075	0.029	-0.006	-0.099	-0.149	-0.258	-0.416	-0.251	-0.153	-0.133
98.6	0.079	0.027	-0.015	-0.103	-0.137	-0.246	-0.412	-0.251	-0.147	-0.133
100.0	0.080	0.019	-0.016	-0.105	-0.124	-0.237	-0.402	-0.249	-0.143	-0.132
101.4	0.080	0.017	-0.015	-0.099	-0.115	-0.225	-0.382	-0.245	-0.138	-0.132
102.8	0.082	0.017	-0.013	-0.099	-0.110	-0.216	-0.370	-0.238	-0.133	-0.131
104.2	0.083	0.017	-0.016	-0.097	-0.101	-0.203	-0.358	-0.227	-0.129	-0.131
105.6	0.082	0.014	-0.019	-0.093	-0.095	-0.187	-0.337	-0.230	-0.128	-0.131
107.0	0.083	0.009	-0.016	-0.098	-0.083	-0.168	-0.313	-0.226	-0.126	-0.131
108.4	0.081	0.006	-0.024	-0.102	-0.070	-0.143	-0.295	-0.214	-0.116	-0.131
109.8	0.082	0.005	-0.027	-0.102	-0.061	-0.123	-0.275	-0.211	-0.111	-0.131
111.2	0.086	0.001	-0.030	-0.102	-0.041	-0.100	-0.245	-0.204	-0.112	-0.130
112.6	0.086	-0.005	-0.032	-0.100	-0.023	-0.061	-0.211	-0.190	-0.108	-0.129
114.0	0.088	-0.005	-0.028	-0.097	-0.011	-0.023	-0.171	-0.174	-0.100	-0.128
115.4	0.089	-0.003	-0.026	-0.093	0.000	-0.001	-0.136	-0.162	-0.090	-0.127
116.8	0.088	-0.005	-0.025	-0.092	-0.002	0.007	-0.109	-0.145	-0.080	-0.126
118.3	0.086	-0.008	-0.032	-0.099	-0.007	0.006	-0.085	-0.122	-0.068	-0.126
119.7	0.084	-0.009	-0.039	-0.105	-0.014	0.000	-0.071	-0.103	-0.044	-0.126
121.1	0.084	-0.016	-0.044	-0.115	-0.049	-0.024	-0.065	-0.090	-0.026	-0.126
122.5	0.081	-0.022	-0.062	-0.136	-0.086	-0.067	-0.085	-0.077	-0.016	-0.125

Table 22. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.082	-0.034	-0.085	-0.159	-0.121	-0.112	-0.120	-0.068	-0.002	-0.125
125.3	0.080	-0.051	-0.107	-0.182	-0.141	-0.123	-0.131	-0.077	0.005	-0.124
126.7	0.076	-0.068	-0.120	-0.195	-0.147	-0.120	-0.116	-0.095	-0.017	-0.123
128.1	0.071	-0.081	-0.124	-0.199	-0.153	-0.132	-0.117	-0.095	-0.031	-0.122
129.5	0.072	-0.080	-0.124	-0.200	-0.164	-0.159	-0.134	-0.091	-0.026	-0.120
130.9	0.065	-0.080	-0.123	-0.201	-0.174	-0.170	-0.140	-0.086	-0.018	-0.120
132.3	0.058	-0.081	-0.123	-0.205	-0.173	-0.162	-0.131	-0.074	-0.008	-0.121
133.7	0.054	-0.080	-0.119	-0.202	-0.171	-0.166	-0.125	-0.056	-0.007	-0.121
135.1	0.050	-0.077	-0.116	-0.198	-0.180	-0.188	-0.135	-0.040	0.015	-0.122
136.5	0.052	-0.072	-0.120	-0.201	-0.192	-0.205	-0.153	-0.040	0.022	-0.122
137.9	0.049	-0.075	-0.122	-0.208	-0.193	-0.203	-0.157	-0.041	0.019	-0.122
139.3	0.047	-0.073	-0.122	-0.206	-0.192	-0.199	-0.161	-0.039	0.028	-0.122
140.8	0.048	-0.069	-0.116	-0.197	-0.196	-0.198	-0.173	-0.032	0.034	-0.122
142.2	0.050	-0.064	-0.108	-0.197	-0.199	-0.212	-0.191	-0.022	0.038	-0.122
143.6	0.051	-0.060	-0.113	-0.198	-0.207	-0.227	-0.204	-0.027	0.046	-0.122
145.0	0.052	-0.058	-0.112	-0.200	-0.215	-0.235	-0.221	-0.025	0.046	-0.123
146.4	0.052	-0.062	-0.118	-0.203	-0.222	-0.249	-0.236	-0.026	0.041	-0.123
147.8	0.056	-0.064	-0.118	-0.201	-0.232	-0.269	-0.261	-0.030	0.049	-0.122
149.2	0.057	-0.059	-0.109	-0.198	-0.238	-0.293	-0.292	-0.031	0.053	-0.122
150.6	0.053	-0.057	-0.108	-0.200	-0.249	-0.304	-0.316	-0.056	0.036	-0.123
152.0	0.055	-0.052	-0.105	-0.202	-0.257	-0.321	-0.340	-0.080	0.019	-0.123
153.4	0.054	-0.050	-0.106	-0.197	-0.256	-0.328	-0.369	-0.093	0.012	-0.121
154.8	0.058	-0.053	-0.108	-0.199	-0.260	-0.346	-0.393	-0.133	-0.007	-0.119
156.2	0.060	-0.051	-0.104	-0.199	-0.277	-0.352	-0.396	-0.161	-0.047	-0.118
157.6	0.058	-0.042	-0.099	-0.195	-0.271	-0.344	-0.409	-0.151	-0.052	-0.118
159.0	0.066	-0.043	-0.101	-0.197	-0.266	-0.354	-0.422	-0.173	-0.055	-0.119
160.4	0.067	-0.047	-0.101	-0.191	-0.266	-0.354	-0.425	-0.183	-0.071	-0.119
161.8	0.071	-0.039	-0.087	-0.183	-0.253	-0.349	-0.429	-0.187	-0.077	-0.121
163.3	0.074	-0.035	-0.086	-0.179	-0.251	-0.348	-0.431	-0.192	-0.081	-0.122
164.7	0.071	-0.035	-0.081	-0.177	-0.253	-0.349	-0.442	-0.195	-0.078	-0.123
166.1	0.070	-0.025	-0.073	-0.169	-0.250	-0.351	-0.454	-0.212	-0.087	-0.124
167.5	0.069	-0.015	-0.061	-0.157	-0.245	-0.345	-0.451	-0.214	-0.095	-0.124
168.9	0.070	-0.009	-0.056	-0.148	-0.238	-0.340	-0.452	-0.211	-0.089	-0.124
170.3	0.073	0.002	-0.048	-0.141	-0.221	-0.335	-0.454	-0.215	-0.095	-0.125
171.7	0.073	0.012	-0.037	-0.131	-0.215	-0.331	-0.463	-0.228	-0.111	-0.125
173.1	0.078	0.013	-0.031	-0.124	-0.211	-0.332	-0.466	-0.248	-0.126	-0.125
174.5	0.082	0.018	-0.027	-0.122	-0.209	-0.320	-0.458	-0.253	-0.128	-0.126
175.9	0.084	0.022	-0.030	-0.117	-0.200	-0.311	-0.460	-0.245	-0.128	-0.127
177.3	0.089	0.018	-0.023	-0.108	-0.185	-0.305	-0.456	-0.245	-0.131	-0.128
178.7	0.088	0.022	-0.016	-0.099	-0.174	-0.292	-0.448	-0.256	-0.136	-0.129
180.1	0.088	0.027	-0.011	-0.094	-0.163	-0.284	-0.438	-0.259	-0.139	-0.129
181.5	0.089	0.029	-0.005	-0.088	-0.153	-0.266	-0.428	-0.249	-0.140	-0.130
182.9	0.091	0.035	-0.004	-0.081	-0.137	-0.247	-0.422	-0.248	-0.137	-0.130
184.3	0.092	0.035	-0.001	-0.077	-0.120	-0.235	-0.408	-0.254	-0.135	-0.130

Table 22. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.086	0.034	0.007	-0.072	-0.117	-0.230	-0.402	-0.253	-0.136	-0.130
187.2	0.082	0.034	0.006	-0.072	-0.106	-0.217	-0.393	-0.254	-0.133	-0.131
188.6	0.084	0.033	0.005	-0.072	-0.094	-0.203	-0.372	-0.242	-0.130	-0.131
190.0	0.083	0.035	0.010	-0.069	-0.088	-0.191	-0.360	-0.233	-0.124	-0.131
191.4	0.085	0.039	0.003	-0.070	-0.076	-0.174	-0.342	-0.227	-0.113	-0.131
192.8	0.087	0.035	-0.002	-0.072	-0.067	-0.151	-0.323	-0.221	-0.112	-0.130
194.2	0.087	0.029	0.001	-0.068	-0.049	-0.131	-0.303	-0.222	-0.117	-0.129
195.6	0.088	0.029	0.004	-0.065	-0.041	-0.120	-0.286	-0.218	-0.112	-0.129
197.0	0.089	0.027	0.007	-0.064	-0.036	-0.097	-0.266	-0.210	-0.108	-0.128
198.4	0.091	0.024	0.000	-0.065	-0.017	-0.075	-0.241	-0.200	-0.100	-0.128
199.8	0.089	0.019	-0.001	-0.067	0.000	-0.052	-0.213	-0.194	-0.095	-0.127
201.2	0.089	0.016	-0.004	-0.066	0.014	-0.023	-0.179	-0.184	-0.088	-0.126
202.6	0.092	0.018	-0.004	-0.065	0.022	-0.005	-0.154	-0.168	-0.085	-0.126
204.0	0.095	0.017	-0.001	-0.066	0.020	0.013	-0.127	-0.153	-0.079	-0.126
205.4	0.092	0.011	-0.003	-0.063	0.026	0.036	-0.094	-0.138	-0.065	-0.125
206.8	0.091	0.012	-0.004	-0.060	0.039	0.052	-0.067	-0.127	-0.052	-0.125
208.3	0.092	0.020	-0.003	-0.063	0.041	0.065	-0.042	-0.117	-0.049	-0.125
209.7	0.088	0.013	-0.005	-0.068	0.033	0.077	-0.015	-0.090	-0.033	-0.125
211.1	0.090	0.009	-0.009	-0.075	0.003	0.051	-0.007	-0.070	-0.015	-0.124
212.5	0.092	0.006	-0.023	-0.095	-0.041	-0.008	-0.038	-0.042	0.006	-0.123
213.9	0.088	-0.009	-0.058	-0.129	-0.073	-0.045	-0.069	-0.027	0.029	-0.123
215.3	0.087	-0.039	-0.090	-0.158	-0.095	-0.059	-0.084	-0.051	0.030	-0.122
216.7	0.085	-0.062	-0.103	-0.177	-0.111	-0.077	-0.091	-0.076	0.011	-0.121
218.1	0.082	-0.073	-0.114	-0.182	-0.118	-0.086	-0.091	-0.084	-0.007	-0.119
219.5	0.081	-0.077	-0.117	-0.183	-0.124	-0.091	-0.084	-0.075	-0.006	-0.118
220.9	0.076	-0.076	-0.107	-0.182	-0.131	-0.108	-0.084	-0.055	0.001	-0.118
222.3	0.067	-0.074	-0.102	-0.182	-0.136	-0.106	-0.084	-0.036	0.016	-0.118
223.7	0.060	-0.071	-0.106	-0.182	-0.141	-0.112	-0.086	-0.024	0.036	-0.118
225.1	0.053	-0.067	-0.106	-0.182	-0.148	-0.135	-0.102	-0.012	0.044	-0.120
226.5	0.051	-0.067	-0.106	-0.184	-0.164	-0.156	-0.120	-0.009	0.046	-0.121
227.9	0.053	-0.071	-0.109	-0.191	-0.180	-0.167	-0.139	-0.014	0.051	-0.121
229.3	0.057	-0.076	-0.118	-0.200	-0.188	-0.186	-0.160	-0.016	0.049	-0.121
230.8	0.058	-0.073	-0.117	-0.201	-0.198	-0.219	-0.192	-0.014	0.052	-0.121
232.2	0.057	-0.077	-0.122	-0.204	-0.213	-0.235	-0.214	-0.027	0.044	-0.120
233.6	0.059	-0.077	-0.121	-0.208	-0.226	-0.254	-0.239	-0.035	0.039	-0.120
235.0	0.062	-0.073	-0.118	-0.208	-0.228	-0.273	-0.264	-0.041	0.038	-0.119
236.4	0.061	-0.076	-0.124	-0.211	-0.237	-0.282	-0.288	-0.046	0.035	-0.118
237.8	0.059	-0.077	-0.119	-0.208	-0.252	-0.307	-0.316	-0.048	0.037	-0.119
239.2	0.057	-0.074	-0.118	-0.208	-0.267	-0.319	-0.334	-0.066	0.022	-0.120
240.6	0.055	-0.077	-0.121	-0.212	-0.270	-0.333	-0.359	-0.081	0.017	-0.120
242.0	0.056	-0.076	-0.124	-0.214	-0.263	-0.349	-0.376	-0.097	0.004	-0.120
243.4	0.056	-0.077	-0.128	-0.212	-0.274	-0.339	-0.392	-0.112	-0.015	-0.119
244.8	0.055	-0.075	-0.122	-0.212	-0.277	-0.351	-0.412	-0.121	-0.023	-0.118
246.2	0.056	-0.069	-0.116	-0.207	-0.284	-0.365	-0.425	-0.134	-0.035	-0.119

Table 22. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.055	-0.062	-0.110	-0.203	-0.280	-0.377	-0.434	-0.147	-0.051	-0.119
249.0	0.051	-0.058	-0.101	-0.197	-0.271	-0.365	-0.443	-0.158	-0.057	-0.120
250.4	0.052	-0.056	-0.099	-0.189	-0.269	-0.357	-0.452	-0.168	-0.060	-0.121
251.8	0.057	-0.048	-0.098	-0.186	-0.264	-0.363	-0.456	-0.179	-0.072	-0.122
253.3	0.057	-0.040	-0.091	-0.184	-0.264	-0.354	-0.455	-0.180	-0.078	-0.123
254.7	0.054	-0.039	-0.086	-0.176	-0.260	-0.349	-0.459	-0.171	-0.070	-0.124
256.1	0.056	-0.033	-0.076	-0.167	-0.255	-0.353	-0.466	-0.168	-0.066	-0.125
257.5	0.058	-0.013	-0.056	-0.154	-0.256	-0.358	-0.472	-0.175	-0.068	-0.126
258.9	0.058	0.000	-0.046	-0.136	-0.250	-0.358	-0.485	-0.189	-0.084	-0.127
260.3	0.061	0.003	-0.049	-0.134	-0.246	-0.358	-0.490	-0.203	-0.098	-0.127
261.7	0.072	0.006	-0.038	-0.134	-0.237	-0.354	-0.492	-0.211	-0.101	-0.128
263.1	0.078	0.009	-0.029	-0.121	-0.228	-0.344	-0.494	-0.223	-0.112	-0.127
264.5	0.077	0.013	-0.023	-0.118	-0.222	-0.343	-0.494	-0.232	-0.121	-0.127
265.9	0.079	0.013	-0.029	-0.115	-0.213	-0.338	-0.493	-0.239	-0.125	-0.129
267.3	0.081	0.013	-0.029	-0.111	-0.208	-0.330	-0.488	-0.244	-0.133	-0.130
268.7	0.083	0.020	-0.020	-0.109	-0.196	-0.318	-0.479	-0.246	-0.142	-0.130
270.1	0.087	0.022	-0.022	-0.106	-0.180	-0.303	-0.467	-0.249	-0.137	-0.130
271.5	0.091	0.019	-0.018	-0.102	-0.167	-0.289	-0.453	-0.245	-0.136	-0.129
272.9	0.090	0.022	-0.009	-0.092	-0.155	-0.276	-0.439	-0.238	-0.132	-0.129
274.3	0.088	0.024	-0.007	-0.091	-0.146	-0.270	-0.429	-0.243	-0.132	-0.129
275.8	0.091	0.019	-0.011	-0.087	-0.135	-0.260	-0.415	-0.244	-0.132	-0.129
277.2	0.091	0.020	-0.007	-0.084	-0.119	-0.242	-0.402	-0.239	-0.134	-0.128
278.6	0.088	0.024	-0.003	-0.082	-0.107	-0.226	-0.388	-0.238	-0.131	-0.128
280.0	0.084	0.026	-0.007	-0.081	-0.102	-0.217	-0.367	-0.236	-0.127	-0.128
281.4	0.082	0.020	-0.015	-0.086	-0.094	-0.203	-0.348	-0.231	-0.126	-0.128
282.8	0.083	0.016	-0.011	-0.083	-0.082	-0.188	-0.331	-0.226	-0.122	-0.128
284.2	0.086	0.014	-0.009	-0.083	-0.078	-0.180	-0.316	-0.226	-0.120	-0.127
285.6	0.090	0.007	-0.016	-0.092	-0.071	-0.162	-0.298	-0.221	-0.119	-0.127
287.0	0.085	0.004	-0.021	-0.095	-0.064	-0.144	-0.281	-0.214	-0.111	-0.127
288.4	0.086	0.000	-0.028	-0.098	-0.057	-0.131	-0.263	-0.203	-0.110	-0.127
289.8	0.084	-0.004	-0.031	-0.103	-0.039	-0.104	-0.234	-0.195	-0.105	-0.128
291.2	0.083	-0.008	-0.026	-0.098	-0.024	-0.070	-0.204	-0.185	-0.096	-0.128
292.6	0.081	-0.005	-0.022	-0.091	-0.007	-0.037	-0.169	-0.176	-0.088	-0.127
294.0	0.078	-0.003	-0.024	-0.087	0.012	-0.005	-0.133	-0.161	-0.085	-0.127
295.4	0.080	-0.006	-0.018	-0.081	0.019	0.015	-0.097	-0.142	-0.074	-0.127
296.8	0.073	-0.003	-0.014	-0.084	0.022	0.034	-0.066	-0.125	-0.059	-0.127
298.3	0.070	-0.004	-0.021	-0.089	0.016	0.045	-0.044	-0.103	-0.040	-0.127
299.7	0.070	-0.012	-0.033	-0.101	-0.015	0.024	-0.036	-0.086	-0.023	-0.128
301.1	0.069	-0.020	-0.053	-0.122	-0.044	-0.001	-0.047	-0.066	-0.014	-0.127
302.5	0.070	-0.033	-0.071	-0.145	-0.063	-0.020	-0.057	-0.064	0.001	-0.127
303.9	0.069	-0.053	-0.093	-0.166	-0.085	-0.033	-0.059	-0.070	0.005	-0.126
305.3	0.063	-0.068	-0.104	-0.173	-0.094	-0.041	-0.052	-0.074	-0.004	-0.125
306.7	0.062	-0.077	-0.103	-0.178	-0.100	-0.053	-0.046	-0.063	-0.003	-0.125
308.1	0.058	-0.080	-0.101	-0.182	-0.111	-0.077	-0.057	-0.046	0.010	-0.124

Table 22. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.054	-0.077	-0.106	-0.186	-0.128	-0.098	-0.071	-0.036	0.025	-0.123
310.9	0.050	-0.079	-0.111	-0.189	-0.141	-0.112	-0.082	-0.029	0.028	-0.122
312.3	0.044	-0.079	-0.115	-0.193	-0.145	-0.114	-0.089	-0.036	0.029	-0.121
313.7	0.043	-0.081	-0.117	-0.201	-0.158	-0.132	-0.093	-0.032	0.034	-0.121
315.1	0.044	-0.085	-0.122	-0.205	-0.169	-0.152	-0.108	-0.020	0.040	-0.121
316.5	0.047	-0.088	-0.127	-0.207	-0.179	-0.159	-0.118	-0.022	0.046	-0.121
317.9	0.051	-0.092	-0.128	-0.215	-0.188	-0.175	-0.135	-0.022	0.041	-0.119
319.3	0.050	-0.091	-0.130	-0.215	-0.201	-0.192	-0.157	-0.023	0.040	-0.117
320.8	0.050	-0.090	-0.128	-0.216	-0.215	-0.200	-0.178	-0.023	0.036	-0.117
322.2	0.051	-0.089	-0.129	-0.220	-0.218	-0.213	-0.198	-0.021	0.041	-0.117
323.6	0.049	-0.086	-0.127	-0.217	-0.222	-0.220	-0.217	-0.028	0.044	-0.117
325.0	0.052	-0.085	-0.127	-0.215	-0.233	-0.239	-0.241	-0.021	0.045	-0.117
326.4	0.058	-0.082	-0.121	-0.217	-0.244	-0.262	-0.262	-0.030	0.048	-0.118
327.8	0.056	-0.081	-0.117	-0.221	-0.251	-0.279	-0.288	-0.044	0.037	-0.118
329.2	0.052	-0.085	-0.122	-0.221	-0.265	-0.304	-0.315	-0.058	0.029	-0.118
330.6	0.054	-0.081	-0.126	-0.226	-0.281	-0.315	-0.338	-0.062	0.014	-0.117
332.0	0.053	-0.080	-0.131	-0.229	-0.281	-0.320	-0.367	-0.066	0.016	-0.117
333.4	0.056	-0.084	-0.128	-0.224	-0.280	-0.342	-0.391	-0.103	0.006	-0.116
334.8	0.060	-0.079	-0.115	-0.220	-0.296	-0.349	-0.398	-0.143	-0.033	-0.116
336.2	0.061	-0.072	-0.118	-0.224	-0.301	-0.354	-0.404	-0.145	-0.055	-0.117
337.6	0.058	-0.074	-0.130	-0.228	-0.293	-0.362	-0.421	-0.143	-0.049	-0.117
339.0	0.057	-0.076	-0.124	-0.228	-0.290	-0.358	-0.427	-0.159	-0.048	-0.117
340.4	0.057	-0.072	-0.114	-0.217	-0.292	-0.350	-0.423	-0.164	-0.065	-0.118
341.8	0.059	-0.064	-0.108	-0.210	-0.283	-0.352	-0.426	-0.164	-0.071	-0.121
343.3	0.059	-0.055	-0.103	-0.209	-0.280	-0.357	-0.438	-0.173	-0.069	-0.123
344.7	0.059	-0.049	-0.094	-0.202	-0.282	-0.367	-0.452	-0.191	-0.081	-0.123
346.1	0.056	-0.042	-0.089	-0.195	-0.279	-0.364	-0.452	-0.191	-0.089	-0.123
347.5	0.050	-0.035	-0.075	-0.185	-0.276	-0.363	-0.454	-0.194	-0.091	-0.124
348.9	0.052	-0.028	-0.066	-0.177	-0.268	-0.359	-0.460	-0.196	-0.093	-0.125
350.3	0.056	-0.025	-0.065	-0.170	-0.256	-0.351	-0.464	-0.205	-0.096	-0.125
351.7	0.061	-0.017	-0.060	-0.165	-0.249	-0.362	-0.466	-0.220	-0.109	-0.126
353.1	0.068	-0.009	-0.057	-0.159	-0.245	-0.351	-0.463	-0.227	-0.121	-0.126
354.5	0.073	-0.007	-0.048	-0.154	-0.237	-0.339	-0.459	-0.230	-0.129	-0.126
355.9	0.076	-0.003	-0.043	-0.148	-0.226	-0.332	-0.458	-0.229	-0.132	-0.127
357.3	0.079	0.002	-0.037	-0.141	-0.216	-0.327	-0.450	-0.229	-0.126	-0.127
358.7	0.082	0.006	-0.032	-0.135	-0.208	-0.317	-0.443	-0.231	-0.123	-0.128

Table 23. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0411$, $\mu = 0.231$, $\alpha_s = -3.0°$, $\theta = 8.2°$, $A_1 = -0.5°$, $B_1 = 3.8°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.645	0.260	-0.040	0.041	-0.234	-0.435	-1.159	-0.810	0.198	0.032	-0.022
1.5	0.649	0.264	-0.039	0.045	-0.237	-0.430	-1.152	-0.805	0.213	0.028	-0.017
2.9	0.657	0.268	-0.036	0.050	-0.240	-0.418	-1.172	-0.807	0.234	0.040	-0.015
4.3	0.661	0.273	-0.029	0.055	-0.232	-0.406	-1.163	-0.809	0.258	0.046	-0.003
5.8	0.662	0.275	-0.023	0.058	-0.226	-0.401	-1.175	-0.812	0.275	0.051	-0.005
7.2	0.663	0.280	-0.019	0.068	-0.211	-0.395	-1.159	-0.806	0.301	0.073	0.009
8.6	0.664	0.282	-0.007	0.082	-0.203	-0.394	-1.159	-0.796	0.330	0.091	0.016
10.0	0.666	0.286	0.009	0.096	-0.202	-0.390	-1.179	-0.798	0.345	0.100	0.018
11.4	0.673	0.299	0.024	0.110	-0.197	-0.392	-1.175	-0.801	0.346	0.116	0.026
12.8	0.686	0.313	0.040	0.126	-0.198	-0.396	-1.195	-0.790	0.376	0.124	0.041
14.2	0.699	0.332	0.059	0.145	-0.196	-0.395	-1.186	-0.788	0.397	0.137	0.059
15.6	0.715	0.350	0.079	0.156	-0.194	-0.395	-1.178	-0.794	0.405	0.161	0.071
17.0	0.732	0.373	0.094	0.169	-0.192	-0.394	-1.175	-0.800	0.450	0.184	0.092
18.4	0.753	0.396	0.109	0.183	-0.190	-0.402	-1.181	-0.800	0.471	0.215	0.107
19.8	0.775	0.417	0.131	0.198	-0.192	-0.402	-1.163	-0.797	0.488	0.239	0.127
21.2	0.793	0.435	0.152	0.215	-0.196	-0.401	-1.103	-0.785	0.507	0.258	0.136
22.6	0.807	0.449	0.171	0.230	-0.190	-0.396	-1.067	-0.772	0.557	0.281	0.142
24.0	0.824	0.474	0.189	0.241	-0.176	-0.386	-1.032	-0.759	0.594	0.298	0.152
25.4	0.844	0.497	0.207	0.255	-0.168	-0.390	-1.005	-0.739	0.614	0.313	0.147
26.8	0.862	0.518	0.225	0.277	-0.163	-0.394	-1.000	-0.712	0.678	0.335	0.153
28.3	0.877	0.537	0.249	0.299	-0.159	-0.388	-0.977	-0.683	0.717	0.345	0.163
29.7	0.890	0.555	0.278	0.325	-0.159	-0.391	-0.964	-0.664	0.703	0.348	0.156
31.1	0.901	0.577	0.303	0.346	-0.160	-0.386	-0.947	-0.645	0.625	0.349	0.141
32.5	0.914	0.597	0.320	0.352	-0.162	-0.386	-0.929	-0.637	0.534	0.301	0.118
33.9	0.926	0.610	0.325	0.354	-0.166	-0.388	-0.925	-0.627	0.449	0.218	0.123
35.3	0.937	0.618	0.325	0.354	-0.167	-0.386	-0.908	-0.613	0.341	0.151	0.125
36.7	0.944	0.623	0.323	0.352	-0.167	-0.388	-0.878	-0.612	0.265	0.117	0.058
38.1	0.944	0.621	0.317	0.350	-0.170	-0.390	-0.893	-0.610	0.231	0.082	0.016
39.5	0.941	0.613	0.313	0.343	-0.173	-0.386	-0.917	-0.604	0.280	0.023	-0.022
40.9	0.933	0.601	0.302	0.333	-0.174	-0.380	-0.919	-0.599	0.317	0.071	-0.051
42.3	0.918	0.584	0.287	0.324	-0.173	-0.385	-0.939	-0.602	0.274	0.124	-0.021
43.7	0.904	0.570	0.274	0.312	-0.177	-0.390	-0.926	-0.608	0.219	0.133	0.021
45.1	0.891	0.555	0.258	0.301	-0.182	-0.390	-0.909	-0.613	0.198	0.156	0.030
46.5	0.878	0.533	0.239	0.285	-0.186	-0.389	-0.902	-0.609	0.197	0.175	0.047
47.9	0.855	0.514	0.221	0.271	-0.191	-0.391	-0.893	-0.601	0.234	0.158	0.058
49.3	0.835	0.491	0.201	0.253	-0.196	-0.396	-0.909	-0.587	0.296	0.130	0.046
50.8	0.819	0.469	0.175	0.229	-0.206	-0.399	-0.917	-0.589	0.306	0.120	-0.031
52.2	0.803	0.450	0.145	0.208	-0.213	-0.400	-0.935	-0.607	0.250	0.098	-0.046
53.6	0.790	0.432	0.123	0.190	-0.217	-0.400	-0.963	-0.624	0.163	0.066	-0.022
55.0	0.777	0.412	0.105	0.174	-0.221	-0.408	-1.004	-0.643	0.086	0.025	-0.032
56.4	0.762	0.389	0.088	0.158	-0.226	-0.413	-1.019	-0.658	0.065	0.023	-0.033
57.8	0.746	0.374	0.071	0.142	-0.232	-0.410	-1.016	-0.679	0.036	0.032	-0.045
59.2	0.732	0.363	0.053	0.127	-0.234	-0.413	-1.037	-0.709	0.053	0.037	-0.042
60.6	0.722	0.349	0.038	0.116	-0.233	-0.425	-1.052	-0.730	0.064	0.042	-0.039

Table 23. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.712	0.336	0.026	0.107	-0.230	-0.434	-1.072	-0.769	0.056	0.028	-0.049
63.4	0.699	0.319	0.014	0.097	-0.236	-0.438	-1.071	-0.774	0.059	0.013	-0.047
64.8	0.688	0.304	0.004	0.085	-0.241	-0.446	-1.071	-0.762	0.057	0.012	-0.045
66.2	0.677	0.294	-0.007	0.075	-0.246	-0.454	-1.076	-0.760	0.065	0.014	-0.049
67.6	0.672	0.289	-0.018	0.067	-0.244	-0.452	-1.095	-0.767	0.105	0.010	-0.057
69.0	0.668	0.284	-0.027	0.057	-0.245	-0.446	-1.107	-0.781	0.118	0.017	-0.055
70.4	0.661	0.272	-0.037	0.050	-0.243	-0.449	-1.103	-0.792	0.124	0.030	-0.062
71.8	0.653	0.262	-0.044	0.043	-0.232	-0.455	-1.132	-0.803	0.118	0.028	-0.058
73.3	0.646	0.256	-0.047	0.043	-0.224	-0.457	-1.149	-0.824	0.092	0.018	-0.055
74.7	0.641	0.253	-0.045	0.050	-0.230	-0.462	-1.160	-0.843	0.096	0.026	-0.061
76.1	0.638	0.252	-0.040	0.048	-0.237	-0.471	-1.180	-0.850	0.117	0.017	-0.054
77.5	0.636	0.255	-0.044	0.045	-0.234	-0.481	-1.191	-0.845	0.133	0.025	-0.054
78.9	0.637	0.254	-0.048	0.042	-0.231	-0.478	-1.193	-0.837	0.135	0.029	-0.053
80.3	0.637	0.251	-0.051	0.036	-0.232	-0.475	-1.215	-0.842	0.146	0.027	-0.063
81.7	0.634	0.246	-0.053	0.032	-0.235	-0.469	-1.254	-0.862	0.164	0.030	-0.065
83.1	0.631	0.243	-0.056	0.030	-0.237	-0.470	-1.262	-0.869	0.178	0.028	-0.060
84.5	0.629	0.245	-0.060	0.027	-0.236	-0.477	-1.284	-0.877	0.182	0.030	-0.059
85.9	0.630	0.243	-0.064	0.024	-0.233	-0.480	-1.303	-0.886	0.193	0.035	-0.056
87.3	0.630	0.237	-0.064	0.022	-0.236	-0.486	-1.320	-0.886	0.213	0.042	-0.052
88.7	0.624	0.236	-0.063	0.022	-0.240	-0.486	-1.336	-0.883	0.213	0.047	-0.042
90.1	0.623	0.236	-0.063	0.019	-0.247	-0.489	-1.322	-0.872	0.222	0.044	-0.038
91.5	0.625	0.239	-0.068	0.014	-0.246	-0.490	-1.311	-0.864	0.243	0.045	-0.031
92.9	0.628	0.240	-0.071	0.017	-0.243	-0.481	-1.295	-0.859	0.269	0.057	-0.024
94.3	0.632	0.237	-0.067	0.024	-0.238	-0.469	-1.293	-0.858	0.277	0.068	-0.010
95.8	0.629	0.237	-0.058	0.031	-0.232	-0.461	-1.305	-0.846	0.297	0.078	-0.001
97.2	0.627	0.238	-0.049	0.035	-0.227	-0.461	-1.313	-0.839	0.315	0.092	0.010
98.6	0.627	0.244	-0.041	0.044	-0.223	-0.454	-1.301	-0.833	0.331	0.103	0.019
100.0	0.631	0.254	-0.032	0.056	-0.220	-0.443	-1.301	-0.824	0.352	0.114	0.020
101.4	0.639	0.265	-0.017	0.064	-0.218	-0.436	-1.302	-0.822	0.367	0.121	0.021
102.8	0.653	0.279	-0.006	0.074	-0.208	-0.430	-1.310	-0.819	0.376	0.136	0.030
104.2	0.667	0.292	0.005	0.090	-0.198	-0.429	-1.314	-0.818	0.387	0.153	0.041
105.6	0.680	0.306	0.023	0.104	-0.194	-0.422	-1.328	-0.821	0.409	0.176	0.063
107.0	0.694	0.325	0.038	0.115	-0.194	-0.424	-1.309	-0.821	0.426	0.205	0.088
108.4	0.709	0.338	0.052	0.126	-0.204	-0.425	-1.301	-0.814	0.442	0.231	0.100
109.8	0.722	0.354	0.071	0.143	-0.203	-0.422	-1.278	-0.799	0.477	0.265	0.123
111.2	0.738	0.378	0.098	0.163	-0.206	-0.416	-1.231	-0.787	0.486	0.291	0.140
112.6	0.757	0.399	0.120	0.175	-0.208	-0.407	-1.160	-0.768	0.503	0.302	0.148
114.0	0.776	0.421	0.128	0.178	-0.201	-0.401	-1.103	-0.747	0.537	0.310	0.156
115.4	0.791	0.441	0.135	0.190	-0.194	-0.397	-1.055	-0.722	0.562	0.326	0.156
116.8	0.805	0.453	0.152	0.205	-0.192	-0.395	-0.970	-0.697	0.589	0.348	0.150
118.3	0.817	0.466	0.172	0.221	-0.192	-0.393	-0.924	-0.670	0.592	0.361	0.157
119.7	0.826	0.481	0.198	0.247	-0.184	-0.391	-0.876	-0.639	0.596	0.384	0.168
121.1	0.836	0.503	0.222	0.267	-0.177	-0.387	-0.858	-0.612	0.601	0.406	0.176
122.5	0.850	0.523	0.238	0.277	-0.181	-0.384	-0.859	-0.601	0.574	0.366	0.178

Table 23. Continued.

$$C_p \times 100 \text{ for orifice:}$$

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	0.863	0.537	0.249	0.285	-0.186	-0.379	-0.834	-0.604	0.487	0.291	0.165
125.3	0.875	0.550	0.256	0.292	-0.188	-0.370	-0.823	-0.604	0.424	0.285	0.169
126.7	0.883	0.559	0.260	0.292	-0.190	-0.370	-0.823	-0.602	0.366	0.296	0.129
128.1	0.889	0.562	0.259	0.288	-0.190	-0.369	-0.806	-0.604	0.382	0.249	0.086
129.5	0.890	0.558	0.252	0.284	-0.192	-0.365	-0.781	-0.603	0.388	0.092	0.054
130.9	0.886	0.552	0.246	0.277	-0.195	-0.368	-0.762	-0.598	0.353	-0.027	-0.025
132.3	0.879	0.546	0.235	0.268	-0.197	-0.364	-0.750	-0.584	0.339	-0.022	-0.089
133.7	0.875	0.535	0.223	0.258	-0.202	-0.365	-0.747	-0.582	0.306	0.078	-0.084
135.1	0.864	0.521	0.208	0.252	-0.202	-0.362	-0.738	-0.579	0.301	0.177	-0.067
136.5	0.849	0.500	0.192	0.236	-0.206	-0.356	-0.748	-0.567	0.326	0.220	-0.001
137.9	0.831	0.482	0.179	0.224	-0.209	-0.355	-0.746	-0.557	0.320	0.284	0.112
139.3	0.813	0.464	0.157	0.208	-0.211	-0.354	-0.740	-0.559	0.291	0.230	0.118
140.8	0.796	0.441	0.138	0.192	-0.213	-0.355	-0.761	-0.562	0.271	0.121	0.091
142.2	0.779	0.422	0.118	0.178	-0.212	-0.354	-0.777	-0.571	0.239	0.087	0.040
143.6	0.767	0.405	0.101	0.165	-0.217	-0.354	-0.780	-0.582	0.208	0.063	-0.009
145.0	0.753	0.391	0.086	0.152	-0.222	-0.352	-0.801	-0.587	0.166	0.056	-0.020
146.4	0.743	0.373	0.068	0.141	-0.220	-0.354	-0.833	-0.600	0.118	0.061	-0.030
147.8	0.732	0.358	0.052	0.128	-0.216	-0.360	-0.849	-0.618	0.099	0.058	-0.043
149.2	0.720	0.345	0.037	0.115	-0.215	-0.363	-0.878	-0.643	0.105	0.056	-0.031
150.6	0.711	0.331	0.024	0.101	-0.221	-0.367	-0.908	-0.675	0.106	0.060	-0.017
152.0	0.699	0.318	0.010	0.090	-0.225	-0.373	-0.925	-0.701	0.121	0.064	-0.029
153.4	0.687	0.306	-0.001	0.081	-0.226	-0.381	-0.946	-0.725	0.122	0.062	-0.033
154.8	0.677	0.293	-0.010	0.073	-0.231	-0.388	-0.963	-0.743	0.122	0.062	-0.041
156.2	0.668	0.284	-0.019	0.061	-0.232	-0.390	-0.967	-0.743	0.129	0.068	-0.037
157.6	0.663	0.276	-0.029	0.051	-0.232	-0.393	-0.982	-0.744	0.135	0.059	-0.039
159.0	0.658	0.269	-0.039	0.047	-0.237	-0.401	-1.001	-0.760	0.132	0.055	-0.044
160.4	0.651	0.264	-0.042	0.040	-0.233	-0.399	-1.002	-0.772	0.125	0.061	-0.049
161.8	0.646	0.259	-0.048	0.039	-0.229	-0.401	-1.018	-0.782	0.113	0.052	-0.051
163.3	0.643	0.251	-0.051	0.041	-0.227	-0.406	-1.049	-0.785	0.110	0.041	-0.051
164.7	0.636	0.245	-0.053	0.038	-0.229	-0.406	-1.064	-0.786	0.125	0.034	-0.041
166.1	0.628	0.243	-0.056	0.033	-0.230	-0.415	-1.079	-0.788	0.128	0.035	-0.045
167.5	0.629	0.242	-0.061	0.030	-0.227	-0.422	-1.093	-0.792	0.150	0.042	-0.051
168.9	0.628	0.243	-0.063	0.026	-0.227	-0.424	-1.113	-0.789	0.154	0.039	-0.041
170.3	0.628	0.240	-0.066	0.023	-0.225	-0.432	-1.138	-0.787	0.151	0.044	-0.048
171.7	0.626	0.236	-0.067	0.025	-0.227	-0.440	-1.152	-0.788	0.164	0.045	-0.044
173.1	0.625	0.235	-0.067	0.027	-0.235	-0.443	-1.172	-0.796	0.162	0.038	-0.039
174.5	0.625	0.235	-0.066	0.023	-0.237	-0.438	-1.190	-0.811	0.161	0.042	-0.030
175.9	0.626	0.234	-0.067	0.024	-0.237	-0.442	-1.202	-0.823	0.161	0.052	-0.029
177.3	0.627	0.234	-0.066	0.024	-0.242	-0.445	-1.220	-0.822	0.166	0.061	-0.027
178.7	0.624	0.236	-0.062	0.020	-0.244	-0.447	-1.232	-0.819	0.183	0.065	-0.024
180.1	0.623	0.236	-0.063	0.019	-0.245	-0.448	-1.234	-0.814	0.193	0.077	-0.009
181.5	0.626	0.234	-0.065	0.017	-0.248	-0.440	-1.230	-0.813	0.199	0.085	0.005
182.9	0.628	0.238	-0.067	0.016	-0.247	-0.434	-1.226	-0.807	0.209	0.098	0.019
184.3	0.633	0.243	-0.065	0.020	-0.241	-0.426	-1.216	-0.810	0.231	0.109	0.028

Table 23. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.636	0.245	-0.060	0.030	-0.233	-0.416	-1.218	-0.804	0.253	0.126	0.037
187.2	0.635	0.244	-0.050	0.040	-0.225	-0.413	-1.233	-0.798	0.274	0.146	0.040
188.6	0.635	0.246	-0.038	0.049	-0.226	-0.402	-1.221	-0.801	0.303	0.163	0.033
190.0	0.636	0.253	-0.027	0.058	-0.222	-0.398	-1.214	-0.793	0.319	0.178	0.046
191.4	0.642	0.264	-0.016	0.067	-0.218	-0.401	-1.243	-0.797	0.339	0.189	0.061
192.8	0.652	0.279	-0.003	0.081	-0.214	-0.407	-1.240	-0.797	0.366	0.207	0.074
194.2	0.666	0.293	0.010	0.089	-0.219	-0.408	-1.228	-0.787	0.397	0.237	0.096
195.6	0.679	0.308	0.021	0.101	-0.217	-0.403	-1.235	-0.784	0.436	0.270	0.118
197.0	0.693	0.324	0.034	0.114	-0.211	-0.404	-1.250	-0.778	0.447	0.300	0.134
198.4	0.709	0.338	0.049	0.121	-0.217	-0.403	-1.249	-0.774	0.466	0.324	0.143
199.8	0.719	0.352	0.060	0.131	-0.222	-0.405	-1.206	-0.770	0.501	0.352	0.161
201.2	0.730	0.361	0.074	0.139	-0.223	-0.408	-1.152	-0.761	0.518	0.382	0.187
202.6	0.741	0.373	0.087	0.147	-0.220	-0.406	-1.132	-0.753	0.539	0.413	0.191
204.0	0.752	0.388	0.099	0.157	-0.217	-0.402	-1.042	-0.725	0.576	0.439	0.194
205.4	0.762	0.402	0.107	0.167	-0.214	-0.395	-0.997	-0.704	0.635	0.465	0.207
206.8	0.770	0.412	0.120	0.183	-0.207	-0.396	-0.969	-0.679	0.671	0.482	0.225
208.3	0.774	0.423	0.143	0.204	-0.207	-0.395	-0.943	-0.649	0.689	0.487	0.230
209.7	0.780	0.438	0.165	0.223	-0.203	-0.388	-0.935	-0.626	0.674	0.494	0.220
211.1	0.790	0.452	0.184	0.235	-0.205	-0.391	-0.911	-0.600	0.647	0.486	0.214
212.5	0.799	0.467	0.194	0.238	-0.209	-0.398	-0.888	-0.593	0.594	0.455	0.178
213.9	0.810	0.479	0.194	0.241	-0.210	-0.398	-0.839	-0.588	0.484	0.350	0.177
215.3	0.820	0.484	0.191	0.241	-0.215	-0.397	-0.827	-0.576	0.341	0.255	0.161
216.7	0.823	0.484	0.190	0.235	-0.215	-0.403	-0.844	-0.566	0.246	0.203	0.127
218.1	0.821	0.479	0.186	0.233	-0.210	-0.404	-0.820	-0.565	0.236	0.198	0.109
219.5	0.816	0.471	0.177	0.228	-0.212	-0.403	-0.821	-0.566	0.263	0.205	0.007
220.9	0.807	0.462	0.170	0.220	-0.214	-0.399	-0.836	-0.564	0.295	0.168	-0.003
222.3	0.799	0.453	0.157	0.209	-0.219	-0.399	-0.830	-0.572	0.295	0.163	0.008
223.7	0.793	0.438	0.148	0.203	-0.214	-0.395	-0.820	-0.581	0.269	0.154	0.029
225.1	0.781	0.428	0.142	0.197	-0.214	-0.395	-0.815	-0.569	0.210	0.176	0.094
226.5	0.769	0.419	0.128	0.184	-0.217	-0.394	-0.823	-0.565	0.202	0.237	0.127
227.9	0.759	0.402	0.108	0.174	-0.217	-0.393	-0.813	-0.558	0.210	0.292	0.115
229.3	0.746	0.383	0.093	0.162	-0.225	-0.396	-0.796	-0.546	0.220	0.236	0.085
230.8	0.732	0.365	0.080	0.150	-0.229	-0.396	-0.794	-0.541	0.254	0.170	0.050
232.2	0.720	0.353	0.062	0.136	-0.231	-0.397	-0.798	-0.531	0.224	0.135	-0.013
233.6	0.713	0.346	0.048	0.121	-0.237	-0.402	-0.802	-0.542	0.183	0.058	-0.029
235.0	0.706	0.336	0.033	0.108	-0.243	-0.404	-0.820	-0.560	0.140	0.021	-0.033
236.4	0.701	0.322	0.018	0.096	-0.244	-0.404	-0.852	-0.574	0.063	0.035	-0.023
237.8	0.690	0.308	0.003	0.084	-0.248	-0.410	-0.858	-0.596	0.021	0.042	-0.021
239.2	0.677	0.297	-0.010	0.073	-0.248	-0.420	-0.861	-0.613	0.050	0.057	-0.020
240.6	0.670	0.285	-0.018	0.063	-0.248	-0.424	-0.889	-0.630	0.082	0.053	-0.010
242.0	0.662	0.274	-0.028	0.056	-0.252	-0.430	-0.911	-0.658	0.076	0.048	-0.012
243.4	0.651	0.265	-0.037	0.048	-0.257	-0.435	-0.933	-0.693	0.063	0.038	-0.018
244.8	0.644	0.256	-0.047	0.038	-0.264	-0.442	-0.951	-0.717	0.068	0.032	-0.022
246.2	0.639	0.246	-0.060	0.026	-0.266	-0.449	-0.959	-0.724	0.096	0.028	-0.032

Table 23. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.635	0.239	-0.068	0.018	-0.268	-0.454	-0.970	-0.721	0.098	0.034	-0.029
249.0	0.630	0.235	-0.075	0.012	-0.268	-0.452	-0.984	-0.725	0.114	0.038	-0.029
250.4	0.623	0.231	-0.084	0.002	-0.260	-0.448	-0.989	-0.738	0.132	0.021	-0.042
251.8	0.618	0.222	-0.094	-0.001	-0.255	-0.448	-1.006	-0.747	0.123	0.010	-0.041
253.3	0.612	0.211	-0.095	0.002	-0.252	-0.452	-1.032	-0.768	0.110	0.000	-0.042
254.7	0.607	0.206	-0.091	0.008	-0.253	-0.459	-1.049	-0.779	0.113	-0.004	-0.039
256.1	0.602	0.207	-0.088	0.013	-0.258	-0.469	-1.065	-0.779	0.127	-0.003	-0.033
257.5	0.601	0.211	-0.082	0.010	-0.261	-0.471	-1.068	-0.778	0.125	-0.001	-0.027
258.9	0.603	0.214	-0.084	0.004	-0.257	-0.472	-1.073	-0.773	0.137	0.005	-0.025
260.3	0.606	0.213	-0.093	-0.003	-0.258	-0.475	-1.094	-0.770	0.143	0.005	-0.035
261.7	0.606	0.211	-0.099	-0.004	-0.263	-0.468	-1.108	-0.777	0.146	0.001	-0.039
263.1	0.604	0.209	-0.097	-0.004	-0.263	-0.465	-1.119	-0.793	0.162	0.007	-0.031
264.5	0.605	0.208	-0.094	-0.005	-0.258	-0.463	-1.141	-0.805	0.167	-0.003	-0.034
265.9	0.606	0.209	-0.094	-0.004	-0.255	-0.465	-1.165	-0.811	0.193	-0.004	-0.027
267.3	0.605	0.208	-0.093	-0.001	-0.258	-0.470	-1.172	-0.814	0.204	0.007	-0.018
268.7	0.604	0.206	-0.092	0.003	-0.261	-0.475	-1.198	-0.818	0.181	0.010	-0.020
270.1	0.603	0.208	-0.085	0.002	-0.262	-0.476	-1.210	-0.820	0.183	0.009	-0.012
271.5	0.607	0.217	-0.084	0.001	-0.267	-0.469	-1.193	-0.812	0.204	0.017	-0.001
272.9	0.618	0.223	-0.083	0.004	-0.267	-0.460	-1.187	-0.803	0.238	0.029	0.006
274.3	0.624	0.228	-0.076	0.011	-0.263	-0.454	-1.199	-0.802	0.258	0.038	0.021
275.8	0.626	0.233	-0.071	0.016	-0.253	-0.452	-1.201	-0.791	0.275	0.047	0.028
277.2	0.631	0.233	-0.066	0.024	-0.247	-0.445	-1.228	-0.781	0.300	0.059	0.032
278.6	0.628	0.233	-0.056	0.034	-0.243	-0.431	-1.205	-0.778	0.310	0.073	0.030
280.0	0.627	0.240	-0.042	0.044	-0.235	-0.428	-1.227	-0.771	0.318	0.070	0.034
281.4	0.638	0.257	-0.030	0.058	-0.231	-0.426	-1.237	-0.770	0.336	0.078	0.045
282.8	0.653	0.272	-0.014	0.074	-0.228	-0.425	-1.217	-0.768	0.340	0.093	0.049
284.2	0.667	0.287	0.005	0.087	-0.223	-0.424	-1.227	-0.775	0.355	0.118	0.073
285.6	0.681	0.302	0.020	0.098	-0.223	-0.423	-1.244	-0.781	0.361	0.141	0.083
287.0	0.694	0.323	0.033	0.110	-0.223	-0.433	-1.266	-0.774	0.361	0.170	0.096
288.4	0.714	0.344	0.050	0.130	-0.221	-0.437	-1.254	-0.767	0.386	0.206	0.110
289.8	0.733	0.361	0.072	0.147	-0.229	-0.433	-1.214	-0.762	0.424	0.233	0.116
291.2	0.747	0.377	0.093	0.160	-0.235	-0.429	-1.185	-0.764	0.462	0.247	0.124
292.6	0.762	0.394	0.113	0.171	-0.231	-0.423	-1.149	-0.742	0.479	0.267	0.131
294.0	0.776	0.416	0.125	0.179	-0.219	-0.414	-1.077	-0.721	0.480	0.288	0.136
295.4	0.796	0.439	0.133	0.189	-0.212	-0.406	-1.018	-0.696	0.497	0.306	0.142
296.8	0.814	0.456	0.152	0.206	-0.204	-0.402	-0.986	-0.673	0.515	0.329	0.141
298.3	0.826	0.470	0.175	0.232	-0.195	-0.399	-0.936	-0.648	0.517	0.334	0.157
299.7	0.835	0.486	0.202	0.259	-0.189	-0.397	-0.915	-0.611	0.520	0.344	0.155
301.1	0.842	0.506	0.229	0.281	-0.183	-0.401	-0.907	-0.593	0.502	0.336	0.156
302.5	0.856	0.525	0.252	0.294	-0.182	-0.399	-0.895	-0.578	0.491	0.330	0.133
303.9	0.870	0.542	0.263	0.305	-0.188	-0.396	-0.875	-0.574	0.440	0.305	0.127
305.3	0.884	0.558	0.272	0.311	-0.192	-0.395	-0.858	-0.574	0.366	0.321	0.149
306.7	0.896	0.571	0.278	0.314	-0.190	-0.391	-0.864	-0.571	0.328	0.349	0.161
308.1	0.906	0.574	0.274	0.313	-0.190	-0.392	-0.866	-0.576	0.315	0.283	0.150

Table 23. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	0.908	0.572	0.272	0.305	-0.191	-0.389	-0.843	-0.581	0.321	0.161	0.078
310.9	0.905	0.568	0.264	0.298	-0.193	-0.383	-0.815	-0.572	0.248	0.023	-0.023
312.3	0.902	0.558	0.252	0.292	-0.193	-0.383	-0.795	-0.562	0.176	-0.054	-0.078
313.7	0.892	0.549	0.243	0.285	-0.196	-0.379	-0.780	-0.554	0.163	-0.007	-0.087
315.1	0.879	0.540	0.233	0.277	-0.193	-0.370	-0.783	-0.540	0.149	0.082	-0.082
316.5	0.870	0.522	0.218	0.262	-0.190	-0.368	-0.806	-0.531	0.174	0.136	-0.050
317.9	0.857	0.503	0.197	0.247	-0.198	-0.367	-0.816	-0.535	0.201	0.190	-0.010
319.3	0.837	0.482	0.176	0.232	-0.203	-0.367	-0.813	-0.553	0.208	0.228	0.025
320.8	0.817	0.460	0.158	0.218	-0.205	-0.360	-0.819	-0.557	0.207	0.189	0.063
322.2	0.800	0.440	0.138	0.203	-0.207	-0.364	-0.825	-0.566	0.167	0.135	0.075
323.6	0.786	0.421	0.118	0.184	-0.212	-0.366	-0.839	-0.574	0.117	0.098	0.035
325.0	0.771	0.403	0.099	0.168	-0.215	-0.363	-0.872	-0.584	0.095	0.080	-0.014
326.4	0.757	0.385	0.079	0.155	-0.216	-0.363	-0.902	-0.607	0.070	0.069	-0.045
327.8	0.745	0.369	0.060	0.141	-0.217	-0.371	-0.911	-0.629	0.057	0.060	-0.027
329.2	0.732	0.355	0.043	0.128	-0.219	-0.375	-0.925	-0.646	0.079	0.056	-0.011
330.6	0.722	0.342	0.031	0.113	-0.225	-0.383	-0.949	-0.668	0.077	0.057	-0.016
332.0	0.711	0.328	0.018	0.100	-0.226	-0.391	-0.969	-0.703	0.085	0.065	-0.025
333.4	0.698	0.314	0.006	0.089	-0.233	-0.396	-0.972	-0.711	0.096	0.064	-0.037
334.8	0.686	0.302	-0.005	0.080	-0.242	-0.405	-0.973	-0.711	0.088	0.057	-0.032
336.2	0.677	0.291	-0.016	0.069	-0.244	-0.408	-0.971	-0.706	0.111	0.047	-0.032
337.6	0.673	0.286	-0.025	0.060	-0.243	-0.406	-0.983	-0.709	0.117	0.045	-0.032
339.0	0.672	0.281	-0.031	0.053	-0.242	-0.397	-0.998	-0.721	0.114	0.035	-0.041
340.4	0.664	0.277	-0.037	0.046	-0.244	-0.399	-1.001	-0.724	0.118	0.027	-0.043
341.8	0.660	0.272	-0.044	0.045	-0.240	-0.399	-1.004	-0.724	0.115	0.032	-0.050
343.3	0.658	0.266	-0.047	0.041	-0.229	-0.404	-1.015	-0.719	0.130	0.019	-0.055
344.7	0.651	0.260	-0.050	0.043	-0.227	-0.416	-1.028	-0.712	0.139	0.022	-0.041
346.1	0.645	0.255	-0.048	0.046	-0.231	-0.420	-1.044	-0.719	0.126	0.026	-0.047
347.5	0.642	0.254	-0.047	0.040	-0.230	-0.422	-1.063	-0.737	0.135	0.028	-0.047
348.9	0.641	0.254	-0.051	0.037	-0.229	-0.419	-1.076	-0.753	0.156	0.035	-0.049
350.3	0.642	0.252	-0.055	0.040	-0.225	-0.426	-1.090	-0.772	0.157	0.021	-0.046
351.7	0.641	0.252	-0.052	0.041	-0.224	-0.429	-1.108	-0.792	0.165	0.017	-0.032
353.1	0.641	0.253	-0.048	0.046	-0.231	-0.429	-1.127	-0.806	0.171	0.020	-0.025
354.5	0.646	0.253	-0.043	0.046	-0.234	-0.432	-1.126	-0.813	0.170	0.019	-0.031
355.9	0.646	0.255	-0.042	0.043	-0.233	-0.430	-1.139	-0.818	0.172	0.029	-0.026
357.3	0.646	0.261	-0.044	0.043	-0.230	-0.435	-1.145	-0.817	0.174	0.028	-0.017
358.7	0.648	0.259	-0.043	0.041	-0.232	-0.439	-1.157	-0.817	0.184	0.027	-0.023

Table 24. Modified unsteady pressure coefficients around the body at x/l = 0.90. C_T/σ = 0.0411, μ = 0.231, α_s = -3.0°, θ = 8.2°, A_1 = −0.5°, B_1 = 3.8°.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	-0.086	-0.392	-0.526	-0.760	-0.952	-1.159	-1.137	-0.804	-0.608	0.077
1.5	-0.086	-0.394	-0.525	-0.762	-0.955	-1.152	-1.127	-0.792	-0.607	0.076
2.9	-0.082	-0.398	-0.519	-0.760	-0.965	-1.172	-1.130	-0.796	-0.608	0.076
4.3	-0.086	-0.401	-0.527	-0.756	-0.968	-1.163	-1.130	-0.796	-0.603	0.075
5.8	-0.086	-0.394	-0.523	-0.755	-0.971	-1.175	-1.126	-0.797	-0.602	0.073
7.2	-0.087	-0.389	-0.527	-0.754	-0.983	-1.159	-1.120	-0.795	-0.605	0.072
8.6	-0.090	-0.385	-0.526	-0.761	-0.990	-1.159	-1.123	-0.784	-0.589	0.073
10.0	-0.089	-0.382	-0.516	-0.754	-0.991	-1.179	-1.125	-0.791	-0.595	0.073
11.4	-0.082	-0.382	-0.510	-0.761	-0.989	-1.175	-1.116	-0.782	-0.598	0.074
12.8	-0.069	-0.381	-0.514	-0.771	-1.012	-1.195	-1.112	-0.777	-0.588	0.074
14.2	-0.078	-0.380	-0.532	-0.773	-1.029	-1.186	-1.118	-0.779	-0.587	0.072
15.6	-0.076	-0.390	-0.530	-0.781	-1.020	-1.178	-1.118	-0.777	-0.587	0.071
17.0	-0.082	-0.397	-0.534	-0.787	-1.013	-1.175	-1.115	-0.793	-0.588	0.070
18.4	-0.088	-0.395	-0.539	-0.784	-1.015	-1.181	-1.115	-0.787	-0.597	0.071
19.8	-0.073	-0.389	-0.535	-0.776	-0.995	-1.163	-1.099	-0.775	-0.600	0.071
21.2	-0.075	-0.395	-0.533	-0.761	-0.966	-1.103	-1.077	-0.785	-0.595	0.073
22.6	-0.067	-0.391	-0.515	-0.744	-0.923	-1.067	-1.039	-0.769	-0.594	0.074
24.0	-0.063	-0.368	-0.497	-0.723	-0.886	-1.032	-1.000	-0.752	-0.582	0.075
25.4	-0.070	-0.360	-0.485	-0.701	-0.859	-1.005	-0.966	-0.744	-0.578	0.076
26.8	-0.068	-0.349	-0.461	-0.681	-0.844	-1.000	-0.935	-0.714	-0.558	0.077
28.3	-0.065	-0.334	-0.458	-0.682	-0.825	-0.977	-0.918	-0.689	-0.528	0.077
29.7	-0.062	-0.333	-0.459	-0.685	-0.833	-0.964	-0.904	-0.667	-0.505	0.078
31.1	-0.064	-0.332	-0.463	-0.682	-0.833	-0.947	-0.890	-0.650	-0.495	0.078
32.5	-0.060	-0.332	-0.459	-0.690	-0.815	-0.929	-0.867	-0.639	-0.487	0.081
33.9	-0.053	-0.340	-0.462	-0.688	-0.814	-0.925	-0.850	-0.635	-0.472	0.081
35.3	-0.045	-0.341	-0.469	-0.696	-0.816	-0.908	-0.852	-0.618	-0.465	0.082
36.7	-0.043	-0.348	-0.485	-0.708	-0.811	-0.878	-0.840	-0.610	-0.458	0.083
38.1	-0.049	-0.361	-0.501	-0.722	-0.807	-0.893	-0.830	-0.623	-0.462	0.083
39.5	-0.053	-0.374	-0.512	-0.732	-0.811	-0.917	-0.825	-0.616	-0.471	0.085
40.9	-0.049	-0.391	-0.514	-0.733	-0.815	-0.919	-0.829	-0.609	-0.466	0.086
42.3	-0.053	-0.403	-0.517	-0.739	-0.821	-0.939	-0.842	-0.608	-0.466	0.088
43.7	-0.061	-0.403	-0.523	-0.744	-0.826	-0.926	-0.843	-0.620	-0.463	0.089
45.1	-0.060	-0.409	-0.533	-0.760	-0.818	-0.909	-0.848	-0.620	-0.465	0.087
46.5	-0.066	-0.410	-0.543	-0.758	-0.808	-0.902	-0.845	-0.615	-0.476	0.087
47.9	-0.070	-0.402	-0.527	-0.742	-0.803	-0.893	-0.840	-0.615	-0.469	0.087
49.3	-0.077	-0.396	-0.516	-0.734	-0.803	-0.909	-0.853	-0.596	-0.455	0.087
50.8	-0.076	-0.390	-0.522	-0.737	-0.805	-0.917	-0.869	-0.591	-0.438	0.085
52.2	-0.074	-0.392	-0.528	-0.748	-0.813	-0.935	-0.899	-0.603	-0.442	0.083
53.6	-0.077	-0.398	-0.525	-0.744	-0.827	-0.963	-0.928	-0.623	-0.465	0.082
55.0	-0.078	-0.391	-0.530	-0.744	-0.839	-1.004	-0.949	-0.636	-0.466	0.081
56.4	-0.080	-0.395	-0.531	-0.753	-0.842	-1.019	-0.960	-0.654	-0.472	0.080
57.8	-0.083	-0.395	-0.536	-0.758	-0.849	-1.016	-0.987	-0.664	-0.493	0.080
59.2	-0.072	-0.388	-0.525	-0.757	-0.863	-1.037	-1.005	-0.700	-0.505	0.081
60.6	-0.069	-0.393	-0.543	-0.763	-0.878	-1.052	-1.027	-0.728	-0.530	0.081

Table 24. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	-0.068	-0.405	-0.547	-0.771	-0.891	-1.072	-1.047	-0.761	-0.561	0.081
63.4	-0.063	-0.417	-0.551	-0.782	-0.901	-1.071	-1.044	-0.770	-0.581	0.082
64.8	-0.066	-0.423	-0.561	-0.786	-0.900	-1.071	-1.051	-0.743	-0.581	0.083
66.2	-0.072	-0.421	-0.563	-0.789	-0.905	-1.076	-1.056	-0.740	-0.559	0.081
67.6	-0.080	-0.419	-0.563	-0.781	-0.902	-1.095	-1.059	-0.755	-0.563	0.077
69.0	-0.084	-0.417	-0.546	-0.775	-0.914	-1.107	-1.070	-0.761	-0.575	0.074
70.4	-0.084	-0.401	-0.532	-0.769	-0.926	-1.103	-1.082	-0.775	-0.580	0.072
71.8	-0.092	-0.394	-0.541	-0.769	-0.925	-1.132	-1.102	-0.796	-0.587	0.071
73.3	-0.099	-0.397	-0.527	-0.764	-0.936	-1.149	-1.124	-0.811	-0.600	0.072
74.7	-0.102	-0.398	-0.528	-0.762	-0.950	-1.160	-1.139	-0.822	-0.613	0.072
76.1	-0.100	-0.392	-0.527	-0.766	-0.959	-1.180	-1.152	-0.838	-0.634	0.071
77.5	-0.105	-0.393	-0.531	-0.767	-0.965	-1.191	-1.149	-0.824	-0.640	0.070
78.9	-0.102	-0.399	-0.537	-0.770	-0.961	-1.193	-1.154	-0.810	-0.625	0.071
80.3	-0.098	-0.398	-0.526	-0.765	-0.960	-1.215	-1.176	-0.820	-0.619	0.070
81.7	-0.099	-0.400	-0.530	-0.764	-0.976	-1.254	-1.192	-0.842	-0.626	0.068
83.1	-0.093	-0.395	-0.534	-0.764	-0.986	-1.262	-1.205	-0.860	-0.655	0.068
84.5	-0.106	-0.397	-0.532	-0.772	-0.996	-1.284	-1.226	-0.851	-0.658	0.067
85.9	-0.102	-0.389	-0.532	-0.776	-1.002	-1.303	-1.235	-0.866	-0.662	0.065
87.3	-0.103	-0.391	-0.538	-0.771	-1.014	-1.320	-1.240	-0.877	-0.680	0.065
88.7	-0.106	-0.403	-0.531	-0.773	-1.020	-1.336	-1.240	-0.858	-0.677	0.065
90.1	-0.105	-0.397	-0.542	-0.789	-1.028	-1.322	-1.239	-0.857	-0.669	0.064
91.5	-0.104	-0.396	-0.549	-0.789	-1.037	-1.311	-1.230	-0.852	-0.666	0.063
92.9	-0.098	-0.405	-0.538	-0.778	-1.034	-1.295	-1.223	-0.839	-0.653	0.062
94.3	-0.106	-0.407	-0.538	-0.782	-1.030	-1.293	-1.221	-0.844	-0.654	0.061
95.8	-0.102	-0.401	-0.544	-0.781	-1.028	-1.305	-1.214	-0.841	-0.653	0.060
97.2	-0.103	-0.396	-0.529	-0.777	-1.039	-1.313	-1.212	-0.816	-0.636	0.060
98.6	-0.106	-0.388	-0.518	-0.775	-1.041	-1.301	-1.210	-0.820	-0.631	0.061
100.0	-0.106	-0.386	-0.535	-0.779	-1.034	-1.301	-1.207	-0.815	-0.620	0.063
101.4	-0.096	-0.391	-0.547	-0.789	-1.039	-1.302	-1.203	-0.811	-0.621	0.064
102.8	-0.084	-0.390	-0.536	-0.779	-1.040	-1.310	-1.199	-0.809	-0.616	0.065
104.2	-0.086	-0.391	-0.530	-0.781	-1.055	-1.314	-1.195	-0.797	-0.609	0.066
105.6	-0.078	-0.392	-0.532	-0.783	-1.065	-1.328	-1.200	-0.801	-0.610	0.066
107.0	-0.084	-0.391	-0.536	-0.787	-1.057	-1.309	-1.194	-0.811	-0.609	0.066
108.4	-0.091	-0.402	-0.553	-0.794	-1.048	-1.301	-1.170	-0.807	-0.613	0.067
109.8	-0.083	-0.401	-0.553	-0.784	-1.030	-1.278	-1.152	-0.787	-0.609	0.066
111.2	-0.082	-0.402	-0.537	-0.776	-1.002	-1.231	-1.115	-0.780	-0.596	0.068
112.6	-0.071	-0.398	-0.532	-0.769	-0.964	-1.160	-1.069	-0.769	-0.581	0.070
114.0	-0.075	-0.395	-0.516	-0.753	-0.924	-1.103	-1.022	-0.739	-0.576	0.069
115.4	-0.078	-0.381	-0.504	-0.737	-0.890	-1.055	-0.958	-0.730	-0.565	0.070
116.8	-0.077	-0.360	-0.487	-0.718	-0.857	-0.970	-0.899	-0.715	-0.551	0.070
118.3	-0.075	-0.349	-0.475	-0.709	-0.842	-0.924	-0.856	-0.684	-0.528	0.071
119.7	-0.072	-0.344	-0.474	-0.701	-0.820	-0.876	-0.818	-0.649	-0.506	0.072
121.1	-0.072	-0.348	-0.472	-0.699	-0.815	-0.858	-0.788	-0.631	-0.495	0.074
122.5	-0.067	-0.354	-0.477	-0.706	-0.812	-0.859	-0.776	-0.622	-0.473	0.076

Table 24. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	-0.066	-0.354	-0.482	-0.715	-0.798	-0.834	-0.758	-0.614	-0.469	0.077
125.3	-0.059	-0.362	-0.501	-0.718	-0.794	-0.823	-0.741	-0.623	-0.464	0.078
126.7	-0.055	-0.367	-0.496	-0.720	-0.796	-0.823	-0.743	-0.620	-0.453	0.078
128.1	-0.060	-0.375	-0.500	-0.728	-0.800	-0.806	-0.733	-0.622	-0.458	0.078
129.5	-0.063	-0.378	-0.521	-0.742	-0.791	-0.781	-0.712	-0.629	-0.464	0.080
130.9	-0.065	-0.392	-0.525	-0.750	-0.781	-0.762	-0.695	-0.622	-0.468	0.081
132.3	-0.063	-0.396	-0.535	-0.751	-0.778	-0.750	-0.686	-0.610	-0.470	0.081
133.7	-0.063	-0.397	-0.532	-0.745	-0.767	-0.747	-0.680	-0.607	-0.461	0.082
135.1	-0.069	-0.396	-0.529	-0.743	-0.761	-0.738	-0.674	-0.601	-0.452	0.082
136.5	-0.072	-0.390	-0.521	-0.735	-0.753	-0.748	-0.675	-0.582	-0.447	0.081
137.9	-0.060	-0.386	-0.510	-0.732	-0.752	-0.746	-0.673	-0.578	-0.439	0.082
139.3	-0.072	-0.377	-0.514	-0.742	-0.758	-0.740	-0.679	-0.586	-0.436	0.081
140.8	-0.068	-0.387	-0.522	-0.744	-0.762	-0.761	-0.700	-0.582	-0.431	0.082
142.2	-0.061	-0.399	-0.530	-0.755	-0.776	-0.777	-0.717	-0.587	-0.427	0.082
143.6	-0.067	-0.404	-0.543	-0.758	-0.778	-0.780	-0.731	-0.597	-0.436	0.082
145.0	-0.067	-0.407	-0.545	-0.758	-0.779	-0.801	-0.761	-0.599	-0.445	0.083
146.4	-0.067	-0.399	-0.531	-0.751	-0.784	-0.833	-0.789	-0.599	-0.442	0.083
147.8	-0.069	-0.394	-0.528	-0.754	-0.796	-0.849	-0.818	-0.624	-0.450	0.083
149.2	-0.068	-0.387	-0.527	-0.755	-0.807	-0.878	-0.855	-0.638	-0.454	0.082
150.6	-0.069	-0.386	-0.525	-0.759	-0.816	-0.908	-0.885	-0.666	-0.483	0.082
152.0	-0.063	-0.390	-0.526	-0.762	-0.827	-0.925	-0.923	-0.697	-0.506	0.083
153.4	-0.061	-0.393	-0.531	-0.762	-0.832	-0.946	-0.944	-0.719	-0.520	0.083
154.8	-0.058	-0.399	-0.538	-0.768	-0.842	-0.963	-0.973	-0.736	-0.556	0.083
156.2	-0.066	-0.404	-0.544	-0.767	-0.855	-0.967	-0.980	-0.725	-0.541	0.082
157.6	-0.067	-0.406	-0.536	-0.771	-0.860	-0.982	-0.996	-0.733	-0.542	0.081
159.0	-0.063	-0.404	-0.538	-0.769	-0.859	-1.001	-1.012	-0.757	-0.566	0.078
160.4	-0.071	-0.397	-0.532	-0.759	-0.871	-1.002	-1.026	-0.772	-0.572	0.077
161.8	-0.077	-0.381	-0.518	-0.755	-0.885	-1.018	-1.049	-0.771	-0.567	0.075
163.3	-0.081	-0.376	-0.524	-0.764	-0.883	-1.049	-1.066	-0.767	-0.557	0.075
164.7	-0.083	-0.387	-0.517	-0.760	-0.895	-1.064	-1.072	-0.772	-0.570	0.075
166.1	-0.091	-0.384	-0.515	-0.755	-0.899	-1.079	-1.091	-0.756	-0.571	0.075
167.5	-0.089	-0.375	-0.526	-0.757	-0.910	-1.093	-1.113	-0.774	-0.573	0.074
168.9	-0.082	-0.382	-0.524	-0.748	-0.915	-1.113	-1.107	-0.783	-0.574	0.074
170.3	-0.077	-0.385	-0.517	-0.743	-0.918	-1.138	-1.123	-0.774	-0.569	0.074
171.7	-0.074	-0.375	-0.523	-0.749	-0.930	-1.152	-1.150	-0.773	-0.575	0.074
173.1	-0.076	-0.378	-0.519	-0.751	-0.936	-1.172	-1.158	-0.778	-0.577	0.073
174.5	-0.086	-0.374	-0.517	-0.747	-0.948	-1.190	-1.168	-0.794	-0.571	0.072
175.9	-0.082	-0.371	-0.510	-0.750	-0.958	-1.202	-1.175	-0.802	-0.584	0.071
177.3	-0.088	-0.377	-0.508	-0.753	-0.970	-1.220	-1.175	-0.804	-0.597	0.070
178.7	-0.085	-0.376	-0.518	-0.745	-0.973	-1.232	-1.172	-0.802	-0.590	0.071
180.1	-0.077	-0.380	-0.512	-0.749	-0.971	-1.234	-1.175	-0.795	-0.598	0.071
181.5	-0.085	-0.381	-0.512	-0.746	-0.971	-1.230	-1.179	-0.791	-0.605	0.071
182.9	-0.090	-0.377	-0.511	-0.747	-0.987	-1.226	-1.177	-0.804	-0.602	0.071
184.3	-0.082	-0.378	-0.509	-0.743	-0.993	-1.216	-1.173	-0.798	-0.599	0.070

Table 24. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	-0.077	-0.374	-0.509	-0.744	-0.983	-1.218	-1.183	-0.792	-0.591	0.070
187.2	-0.072	-0.364	-0.496	-0.751	-0.993	-1.233	-1.184	-0.791	-0.589	0.071
188.6	-0.072	-0.365	-0.501	-0.748	-0.999	-1.221	-1.178	-0.792	-0.587	0.073
190.0	-0.073	-0.370	-0.507	-0.749	-1.016	-1.214	-1.180	-0.782	-0.582	0.073
191.4	-0.068	-0.378	-0.512	-0.755	-1.031	-1.243	-1.178	-0.788	-0.591	0.074
192.8	-0.060	-0.376	-0.520	-0.770	-1.031	-1.240	-1.173	-0.790	-0.590	0.076
194.2	-0.061	-0.381	-0.518	-0.770	-1.041	-1.228	-1.172	-0.781	-0.577	0.075
195.6	-0.057	-0.378	-0.522	-0.773	-1.033	-1.235	-1.162	-0.772	-0.570	0.074
197.0	-0.060	-0.377	-0.535	-0.782	-1.033	-1.250	-1.157	-0.760	-0.576	0.074
198.4	-0.060	-0.391	-0.526	-0.775	-1.027	-1.249	-1.158	-0.766	-0.569	0.075
199.8	-0.051	-0.381	-0.528	-0.766	-1.002	-1.206	-1.141	-0.763	-0.572	0.075
201.2	-0.054	-0.373	-0.514	-0.758	-0.968	-1.152	-1.112	-0.762	-0.569	0.076
202.6	-0.051	-0.378	-0.501	-0.742	-0.933	-1.132	-1.069	-0.747	-0.560	0.078
204.0	-0.060	-0.372	-0.491	-0.726	-0.892	-1.042	-1.019	-0.727	-0.553	0.078
205.4	-0.055	-0.364	-0.472	-0.712	-0.854	-0.997	-0.966	-0.723	-0.543	0.078
206.8	-0.056	-0.350	-0.466	-0.694	-0.832	-0.969	-0.918	-0.690	-0.530	0.077
208.3	-0.057	-0.328	-0.455	-0.680	-0.829	-0.943	-0.898	-0.663	-0.510	0.078
209.7	-0.055	-0.327	-0.448	-0.682	-0.825	-0.935	-0.884	-0.634	-0.476	0.078
211.1	-0.058	-0.325	-0.454	-0.685	-0.819	-0.911	-0.864	-0.612	-0.451	0.079
212.5	-0.053	-0.332	-0.466	-0.682	-0.809	-0.888	-0.836	-0.619	-0.447	0.080
213.9	-0.052	-0.339	-0.454	-0.690	-0.795	-0.839	-0.804	-0.608	-0.443	0.081
215.3	-0.047	-0.336	-0.460	-0.695	-0.786	-0.827	-0.792	-0.598	-0.441	0.081
216.7	-0.047	-0.345	-0.477	-0.702	-0.788	-0.844	-0.788	-0.582	-0.424	0.081
218.1	-0.041	-0.354	-0.489	-0.724	-0.797	-0.820	-0.774	-0.585	-0.416	0.084
219.5	-0.043	-0.366	-0.512	-0.735	-0.788	-0.821	-0.765	-0.590	-0.433	0.086
220.9	-0.047	-0.381	-0.519	-0.740	-0.791	-0.836	-0.767	-0.588	-0.442	0.088
222.3	-0.042	-0.395	-0.529	-0.747	-0.804	-0.830	-0.774	-0.595	-0.439	0.088
223.7	-0.043	-0.407	-0.544	-0.761	-0.805	-0.820	-0.763	-0.612	-0.440	0.088
225.1	-0.058	-0.410	-0.545	-0.759	-0.793	-0.815	-0.760	-0.594	-0.442	0.089
226.5	-0.061	-0.415	-0.534	-0.749	-0.783	-0.823	-0.759	-0.587	-0.444	0.089
227.9	-0.062	-0.406	-0.513	-0.749	-0.779	-0.813	-0.749	-0.588	-0.437	0.089
229.3	-0.069	-0.391	-0.513	-0.744	-0.769	-0.796	-0.736	-0.569	-0.431	0.088
230.8	-0.070	-0.388	-0.510	-0.746	-0.768	-0.794	-0.738	-0.566	-0.423	0.086
232.2	-0.072	-0.392	-0.518	-0.739	-0.765	-0.798	-0.747	-0.550	-0.400	0.086
233.6	-0.074	-0.392	-0.515	-0.734	-0.773	-0.802	-0.756	-0.567	-0.396	0.086
235.0	-0.064	-0.387	-0.512	-0.744	-0.783	-0.820	-0.767	-0.587	-0.417	0.085
236.4	-0.066	-0.388	-0.528	-0.747	-0.795	-0.852	-0.800	-0.589	-0.425	0.084
237.8	-0.069	-0.389	-0.532	-0.753	-0.801	-0.858	-0.812	-0.612	-0.433	0.084
239.2	-0.071	-0.394	-0.524	-0.758	-0.810	-0.861	-0.816	-0.622	-0.448	0.085
240.6	-0.073	-0.394	-0.535	-0.759	-0.817	-0.889	-0.844	-0.627	-0.451	0.085
242.0	-0.066	-0.406	-0.542	-0.763	-0.831	-0.911	-0.873	-0.676	-0.481	0.086
243.4	-0.061	-0.405	-0.547	-0.772	-0.849	-0.933	-0.899	-0.703	-0.510	0.085
244.8	-0.070	-0.412	-0.561	-0.776	-0.857	-0.951	-0.922	-0.719	-0.535	0.086
246.2	-0.075	-0.429	-0.562	-0.784	-0.871	-0.959	-0.933	-0.739	-0.556	0.086

Table 24. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	-0.076	-0.428	-0.560	-0.793	-0.872	-0.970	-0.944	-0.714	-0.552	0.084
249.0	-0.074	-0.431	-0.557	-0.786	-0.865	-0.984	-0.959	-0.729	-0.550	0.080
250.4	-0.082	-0.422	-0.549	-0.773	-0.875	-0.989	-0.971	-0.744	-0.557	0.076
251.8	-0.089	-0.412	-0.541	-0.761	-0.882	-1.006	-0.981	-0.749	-0.562	0.073
253.3	-0.089	-0.406	-0.538	-0.764	-0.885	-1.032	-1.005	-0.761	-0.564	0.070
254.7	-0.103	-0.398	-0.532	-0.768	-0.894	-1.049	-1.024	-0.777	-0.583	0.070
256.1	-0.104	-0.394	-0.540	-0.769	-0.909	-1.065	-1.028	-0.782	-0.595	0.070
257.5	-0.104	-0.398	-0.529	-0.770	-0.927	-1.068	-1.017	-0.779	-0.588	0.070
258.9	-0.099	-0.404	-0.532	-0.772	-0.910	-1.073	-1.030	-0.774	-0.589	0.071
260.3	-0.096	-0.403	-0.541	-0.774	-0.919	-1.094	-1.039	-0.768	-0.583	0.071
261.7	-0.096	-0.412	-0.536	-0.768	-0.940	-1.108	-1.051	-0.780	-0.584	0.069
263.1	-0.091	-0.411	-0.538	-0.768	-0.938	-1.119	-1.079	-0.796	-0.595	0.068
264.5	-0.097	-0.394	-0.529	-0.763	-0.950	-1.141	-1.086	-0.816	-0.611	0.068
265.9	-0.096	-0.396	-0.530	-0.761	-0.970	-1.165	-1.089	-0.812	-0.617	0.068
267.3	-0.097	-0.398	-0.534	-0.763	-0.976	-1.172	-1.102	-0.815	-0.609	0.068
268.7	-0.106	-0.392	-0.534	-0.767	-0.976	-1.198	-1.114	-0.818	-0.621	0.068
270.1	-0.106	-0.403	-0.533	-0.768	-0.991	-1.210	-1.114	-0.809	-0.625	0.067
271.5	-0.109	-0.406	-0.528	-0.766	-1.002	-1.193	-1.113	-0.814	-0.621	0.067
272.9	-0.103	-0.401	-0.528	-0.772	-0.996	-1.187	-1.115	-0.805	-0.621	0.068
274.3	-0.091	-0.389	-0.527	-0.767	-0.999	-1.199	-1.116	-0.802	-0.613	0.067
275.8	-0.093	-0.392	-0.531	-0.758	-0.995	-1.201	-1.122	-0.796	-0.603	0.067
277.2	-0.088	-0.389	-0.529	-0.755	-0.994	-1.228	-1.131	-0.775	-0.588	0.066
278.6	-0.084	-0.382	-0.528	-0.753	-0.995	-1.205	-1.121	-0.776	-0.581	0.068
280.0	-0.080	-0.383	-0.521	-0.757	-1.005	-1.227	-1.120	-0.773	-0.577	0.069
281.4	-0.085	-0.386	-0.523	-0.756	-1.008	-1.237	-1.124	-0.759	-0.579	0.069
282.8	-0.075	-0.389	-0.518	-0.757	-1.013	-1.217	-1.131	-0.760	-0.573	0.071
284.2	-0.075	-0.384	-0.522	-0.759	-1.023	-1.227	-1.130	-0.767	-0.578	0.070
285.6	-0.080	-0.388	-0.530	-0.764	-1.030	-1.244	-1.128	-0.782	-0.584	0.071
287.0	-0.078	-0.386	-0.526	-0.774	-1.027	-1.266	-1.126	-0.776	-0.580	0.070
288.4	-0.075	-0.385	-0.531	-0.773	-1.014	-1.254	-1.123	-0.755	-0.573	0.071
289.8	-0.075	-0.387	-0.529	-0.770	-1.000	-1.214	-1.104	-0.756	-0.572	0.073
291.2	-0.072	-0.392	-0.526	-0.763	-0.979	-1.185	-1.074	-0.756	-0.573	0.073
292.6	-0.066	-0.394	-0.518	-0.755	-0.957	-1.149	-1.043	-0.746	-0.569	0.073
294.0	-0.072	-0.382	-0.507	-0.741	-0.915	-1.077	-1.001	-0.722	-0.552	0.073
295.4	-0.077	-0.366	-0.493	-0.728	-0.869	-1.018	-0.945	-0.698	-0.532	0.074
296.8	-0.064	-0.355	-0.483	-0.711	-0.852	-0.986	-0.900	-0.688	-0.526	0.075
298.3	-0.063	-0.351	-0.472	-0.690	-0.832	-0.936	-0.865	-0.657	-0.504	0.076
299.7	-0.063	-0.349	-0.474	-0.694	-0.816	-0.915	-0.838	-0.625	-0.477	0.077
301.1	-0.067	-0.350	-0.468	-0.692	-0.809	-0.907	-0.818	-0.604	-0.457	0.078
302.5	-0.067	-0.357	-0.461	-0.695	-0.789	-0.895	-0.800	-0.595	-0.446	0.079
303.9	-0.062	-0.354	-0.474	-0.705	-0.786	-0.875	-0.795	-0.588	-0.434	0.081
305.3	-0.061	-0.354	-0.486	-0.703	-0.781	-0.858	-0.785	-0.584	-0.426	0.082
306.7	-0.064	-0.366	-0.478	-0.709	-0.783	-0.864	-0.787	-0.583	-0.428	0.083
308.1	-0.059	-0.365	-0.491	-0.723	-0.792	-0.866	-0.793	-0.582	-0.427	0.084

Table 24. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.008	-0.349	-0.443	-0.663	-0.714	-0.707	-0.641	-0.505	-0.333	0.159
310.9	0.006	-0.338	-0.438	-0.653	-0.707	-0.692	-0.612	-0.485	-0.331	0.160
312.3	0.008	-0.347	-0.437	-0.652	-0.691	-0.676	-0.609	-0.452	-0.319	0.161
313.7	0.007	-0.343	-0.426	-0.640	-0.687	-0.676	-0.620	-0.428	-0.283	0.161
315.1	0.000	-0.322	-0.409	-0.622	-0.689	-0.690	-0.631	-0.418	-0.252	0.163
316.5	-0.005	-0.316	-0.403	-0.621	-0.691	-0.715	-0.649	-0.415	-0.250	0.162
317.9	0.002	-0.315	-0.411	-0.633	-0.700	-0.718	-0.653	-0.440	-0.254	0.160
319.3	-0.001	-0.320	-0.429	-0.651	-0.701	-0.712	-0.666	-0.449	-0.264	0.160
320.8	0.010	-0.335	-0.434	-0.656	-0.711	-0.746	-0.707	-0.435	-0.256	0.162
322.2	0.014	-0.330	-0.432	-0.655	-0.734	-0.775	-0.738	-0.467	-0.267	0.163
323.6	0.010	-0.346	-0.455	-0.659	-0.750	-0.789	-0.767	-0.490	-0.301	0.165
325.0	0.009	-0.361	-0.457	-0.677	-0.750	-0.811	-0.793	-0.504	-0.312	0.164
326.4	0.008	-0.351	-0.460	-0.677	-0.755	-0.841	-0.829	-0.522	-0.321	0.163
327.8	0.007	-0.352	-0.460	-0.679	-0.767	-0.874	-0.868	-0.559	-0.345	0.164
329.2	0.007	-0.353	-0.462	-0.677	-0.779	-0.875	-0.877	-0.591	-0.382	0.164
330.6	0.008	-0.351	-0.463	-0.678	-0.770	-0.877	-0.884	-0.581	-0.383	0.162
332.0	0.008	-0.357	-0.477	-0.678	-0.771	-0.877	-0.894	-0.579	-0.381	0.162
333.4	0.002	-0.351	-0.466	-0.677	-0.777	-0.889	-0.909	-0.588	-0.388	0.161
334.8	0.000	-0.349	-0.455	-0.678	-0.779	-0.899	-0.918	-0.591	-0.390	0.160
336.2	0.002	-0.348	-0.457	-0.669	-0.780	-0.901	-0.938	-0.584	-0.388	0.159
337.6	-0.008	-0.343	-0.448	-0.660	-0.781	-0.919	-0.959	-0.595	-0.384	0.157
339.0	-0.002	-0.350	-0.442	-0.663	-0.786	-0.935	-0.981	-0.620	-0.407	0.157
340.4	-0.007	-0.338	-0.443	-0.658	-0.797	-0.949	-0.989	-0.638	-0.421	0.156
341.8	-0.018	-0.323	-0.434	-0.653	-0.796	-0.962	-0.999	-0.631	-0.414	0.154
343.3	-0.014	-0.323	-0.435	-0.652	-0.793	-0.981	-0.999	-0.624	-0.404	0.154
344.7	-0.017	-0.328	-0.432	-0.643	-0.810	-0.993	-1.006	-0.600	-0.384	0.155
346.1	-0.018	-0.318	-0.427	-0.642	-0.811	-1.004	-1.027	-0.607	-0.378	0.155
347.5	-0.016	-0.320	-0.421	-0.636	-0.803	-1.022	-1.040	-0.635	-0.398	0.155
348.9	-0.011	-0.319	-0.408	-0.637	-0.816	-1.039	-1.057	-0.664	-0.439	0.155
350.3	-0.007	-0.306	-0.418	-0.633	-0.832	-1.058	-1.063	-0.691	-0.454	0.154
351.7	-0.005	-0.305	-0.419	-0.625	-0.843	-1.072	-1.075	-0.698	-0.468	0.155
353.1	-0.004	-0.313	-0.418	-0.639	-0.847	-1.082	-1.084	-0.706	-0.482	0.155
354.5	-0.010	-0.320	-0.417	-0.643	-0.861	-1.104	-1.084	-0.721	-0.494	0.154
355.9	-0.011	-0.319	-0.428	-0.649	-0.873	-1.100	-1.080	-0.714	-0.501	0.152
357.3	-0.011	-0.320	-0.434	-0.651	-0.884	-1.079	-1.080	-0.713	-0.481	0.150
358.7	-0.001	-0.316	-0.435	-0.654	-0.883	-1.091	-1.077	-0.713	-0.487	0.149

Table 25. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0657$, $\mu = 0.231$, $\alpha_s = -3.0°$, $\theta = 10.4°$, $A_1 = -0.4°$, $B_1 = 3.8°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.728	0.378	0.108	0.185	-0.071	-0.368	-1.067	-0.715	0.282	0.100	0.057
1.5	0.737	0.387	0.111	0.190	-0.075	-0.362	-1.062	-0.711	0.282	0.115	0.069
2.9	0.745	0.391	0.121	0.195	-0.074	-0.352	-1.074	-0.710	0.310	0.124	0.077
4.3	0.751	0.397	0.130	0.207	-0.066	-0.346	-1.070	-0.711	0.351	0.146	0.089
5.8	0.754	0.408	0.143	0.222	-0.056	-0.340	-1.055	-0.708	0.355	0.173	0.112
7.2	0.762	0.417	0.159	0.233	-0.051	-0.334	-1.055	-0.704	0.380	0.196	0.125
8.6	0.771	0.429	0.174	0.249	-0.042	-0.328	-1.075	-0.699	0.411	0.230	0.128
10.0	0.783	0.449	0.194	0.269	-0.028	-0.325	-1.061	-0.701	0.434	0.254	0.135
11.4	0.802	0.467	0.218	0.287	-0.018	-0.328	-1.052	-0.700	0.484	0.278	0.142
12.8	0.821	0.486	0.241	0.312	-0.016	-0.335	-1.059	-0.694	0.524	0.299	0.164
14.2	0.842	0.514	0.267	0.333	-0.016	-0.339	-1.045	-0.698	0.533	0.331	0.190
15.6	0.866	0.546	0.292	0.352	-0.006	-0.340	-1.039	-0.703	0.572	0.360	0.216
17.0	0.896	0.576	0.317	0.372	0.001	-0.341	-1.042	-0.704	0.627	0.398	0.233
18.4	0.928	0.609	0.345	0.393	-0.006	-0.346	-1.031	-0.701	0.672	0.433	0.251
19.8	0.954	0.638	0.375	0.423	-0.008	-0.344	-0.980	-0.692	0.689	0.455	0.267
21.2	0.979	0.667	0.411	0.445	-0.003	-0.340	-0.939	-0.677	0.703	0.477	0.271
22.6	1.008	0.706	0.438	0.460	0.003	-0.337	-0.912	-0.656	0.760	0.490	0.280
24.0	1.043	0.745	0.461	0.476	0.015	-0.337	-0.867	-0.637	0.779	0.506	0.280
25.4	1.078	0.782	0.483	0.497	0.016	-0.340	-0.838	-0.614	0.821	0.534	0.281
26.8	1.110	0.809	0.508	0.521	0.020	-0.336	-0.810	-0.584	0.897	0.561	0.285
28.3	1.130	0.833	0.536	0.545	0.023	-0.333	-0.799	-0.566	0.879	0.575	0.286
29.7	1.143	0.860	0.561	0.568	0.021	-0.332	-0.801	-0.546	0.860	0.597	0.274
31.1	1.166	0.883	0.584	0.581	0.022	-0.331	-0.772	-0.530	0.807	0.592	0.244
32.5	1.178	0.902	0.597	0.583	0.017	-0.332	-0.743	-0.522	0.690	0.530	0.248
33.9	1.188	0.911	0.595	0.581	0.014	-0.334	-0.751	-0.504	0.573	0.406	0.260
35.3	1.194	0.913	0.588	0.578	0.012	-0.335	-0.763	-0.492	0.445	0.260	0.210
36.7	1.192	0.911	0.581	0.572	0.009	-0.337	-0.766	-0.488	0.414	0.213	0.163
38.1	1.184	0.894	0.570	0.560	0.006	-0.337	-0.765	-0.490	0.455	0.252	0.117
39.5	1.168	0.875	0.551	0.548	-0.005	-0.340	-0.764	-0.488	0.466	0.302	0.095
40.9	1.147	0.852	0.531	0.534	-0.005	-0.338	-0.788	-0.488	0.445	0.286	0.076
42.3	1.124	0.822	0.513	0.515	-0.002	-0.335	-0.799	-0.486	0.413	0.209	0.064
43.7	1.098	0.796	0.491	0.498	-0.007	-0.338	-0.781	-0.482	0.396	0.204	0.080
45.1	1.073	0.769	0.462	0.476	-0.012	-0.337	-0.794	-0.475	0.331	0.225	0.096
46.5	1.047	0.739	0.430	0.456	-0.025	-0.337	-0.805	-0.457	0.315	0.235	0.106
47.9	1.020	0.705	0.405	0.437	-0.033	-0.338	-0.796	-0.453	0.348	0.260	0.096
49.3	0.990	0.671	0.380	0.413	-0.032	-0.338	-0.824	-0.454	0.373	0.275	0.066
50.8	0.962	0.640	0.350	0.390	-0.037	-0.335	-0.841	-0.469	0.357	0.222	0.036
52.2	0.939	0.615	0.322	0.365	-0.041	-0.340	-0.849	-0.479	0.312	0.178	0.049
53.6	0.921	0.589	0.294	0.341	-0.044	-0.347	-0.880	-0.485	0.236	0.163	0.049
55.0	0.902	0.565	0.266	0.324	-0.049	-0.346	-0.892	-0.519	0.166	0.144	0.028
56.4	0.884	0.544	0.245	0.306	-0.058	-0.347	-0.939	-0.556	0.155	0.149	0.041
57.8	0.864	0.521	0.228	0.289	-0.060	-0.351	-0.967	-0.595	0.146	0.124	0.037
59.2	0.843	0.498	0.209	0.274	-0.060	-0.361	-0.974	-0.624	0.147	0.094	0.020
60.6	0.825	0.479	0.192	0.260	-0.061	-0.366	-0.981	-0.643	0.142	0.073	0.009

Table 25. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.809	0.465	0.178	0.246	-0.064	-0.366	-0.987	-0.657	0.127	0.070	-0.002
63.4	0.797	0.449	0.163	0.232	-0.070	-0.371	-0.988	-0.675	0.119	0.062	-0.006
64.8	0.786	0.432	0.146	0.222	-0.071	-0.377	-0.982	-0.672	0.146	0.063	-0.012
66.2	0.774	0.420	0.134	0.210	-0.073	-0.381	-0.990	-0.666	0.160	0.070	-0.016
67.6	0.765	0.413	0.124	0.198	-0.073	-0.389	-1.021	-0.669	0.161	0.065	-0.019
69.0	0.759	0.402	0.112	0.187	-0.075	-0.390	-1.018	-0.683	0.176	0.062	-0.017
70.4	0.748	0.390	0.100	0.180	-0.071	-0.389	-1.020	-0.695	0.172	0.062	-0.011
71.8	0.735	0.378	0.094	0.177	-0.066	-0.392	-1.038	-0.698	0.154	0.059	-0.008
73.3	0.728	0.368	0.093	0.177	-0.071	-0.402	-1.100	-0.708	0.152	0.063	-0.009
74.7	0.721	0.365	0.092	0.176	-0.073	-0.402	-1.137	-0.724	0.159	0.066	-0.010
76.1	0.716	0.365	0.090	0.171	-0.073	-0.403	-1.116	-0.740	0.170	0.066	0.005
77.5	0.714	0.364	0.086	0.163	-0.069	-0.416	-1.124	-0.770	0.156	0.081	0.011
78.9	0.713	0.360	0.079	0.162	-0.064	-0.420	-1.156	-0.782	0.168	0.091	0.015
80.3	0.710	0.353	0.080	0.162	-0.070	-0.418	-1.177	-0.778	0.196	0.086	0.019
81.7	0.706	0.353	0.080	0.163	-0.077	-0.415	-1.215	-0.779	0.189	0.084	0.011
83.1	0.708	0.353	0.080	0.162	-0.081	-0.415	-1.244	-0.783	0.193	0.084	0.008
84.5	0.711	0.356	0.081	0.157	-0.080	-0.417	-1.234	-0.792	0.212	0.081	0.011
85.9	0.712	0.357	0.079	0.155	-0.080	-0.423	-1.260	-0.796	0.225	0.090	0.014
87.3	0.712	0.352	0.079	0.159	-0.080	-0.423	-1.285	-0.796	0.242	0.099	0.015
88.7	0.706	0.355	0.084	0.161	-0.082	-0.425	-1.290	-0.799	0.275	0.106	0.036
90.1	0.710	0.362	0.087	0.159	-0.087	-0.425	-1.258	-0.793	0.287	0.119	0.045
91.5	0.722	0.369	0.086	0.160	-0.086	-0.424	-1.256	-0.783	0.301	0.132	0.052
92.9	0.732	0.373	0.089	0.167	-0.085	-0.420	-1.247	-0.780	0.298	0.148	0.068
94.3	0.733	0.376	0.100	0.174	-0.082	-0.413	-1.247	-0.771	0.326	0.164	0.084
95.8	0.733	0.376	0.108	0.179	-0.075	-0.407	-1.213	-0.757	0.365	0.186	0.097
97.2	0.736	0.382	0.114	0.190	-0.071	-0.403	-1.212	-0.748	0.376	0.208	0.102
98.6	0.740	0.394	0.130	0.202	-0.063	-0.398	-1.210	-0.742	0.404	0.222	0.109
100.0	0.753	0.406	0.145	0.217	-0.059	-0.389	-1.223	-0.735	0.423	0.238	0.119
101.4	0.765	0.422	0.165	0.235	-0.058	-0.384	-1.208	-0.729	0.450	0.261	0.129
102.8	0.780	0.443	0.189	0.254	-0.046	-0.377	-1.189	-0.727	0.456	0.282	0.148
104.2	0.804	0.467	0.208	0.274	-0.040	-0.370	-1.198	-0.724	0.479	0.309	0.162
105.6	0.824	0.492	0.229	0.285	-0.035	-0.361	-1.151	-0.721	0.528	0.351	0.183
107.0	0.848	0.514	0.247	0.301	-0.026	-0.363	-1.135	-0.721	0.583	0.393	0.213
108.4	0.871	0.540	0.278	0.330	-0.026	-0.361	-1.124	-0.716	0.609	0.435	0.242
109.8	0.893	0.573	0.310	0.356	-0.027	-0.362	-1.042	-0.697	0.632	0.465	0.269
111.2	0.919	0.603	0.344	0.389	-0.026	-0.355	-0.975	-0.678	0.669	0.500	0.283
112.6	0.949	0.643	0.384	0.414	-0.017	-0.349	-0.902	-0.652	0.691	0.504	0.287
114.0	0.981	0.684	0.413	0.426	-0.012	-0.347	-0.874	-0.620	0.717	0.487	0.280
115.4	1.017	0.720	0.429	0.444	-0.007	-0.341	-0.818	-0.596	0.749	0.526	0.256
116.8	1.048	0.753	0.455	0.466	-0.002	-0.336	-0.741	-0.571	0.777	0.570	0.271
118.3	1.075	0.783	0.482	0.493	0.001	-0.336	-0.715	-0.544	0.760	0.567	0.295
119.7	1.101	0.811	0.515	0.520	0.009	-0.342	-0.692	-0.521	0.730	0.582	0.314
121.1	1.124	0.843	0.546	0.540	0.009	-0.339	-0.687	-0.492	0.725	0.571	0.300
122.5	1.145	0.869	0.563	0.555	0.007	-0.336	-0.682	-0.488	0.686	0.511	0.284

Table 25. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	1.162	0.889	0.582	0.567	0.008	-0.331	-0.681	-0.488	0.593	0.480	0.261
125.3	1.177	0.904	0.585	0.569	0.010	-0.330	-0.677	-0.490	0.549	0.478	0.229
126.7	1.184	0.908	0.579	0.561	0.008	-0.327	-0.652	-0.499	0.531	0.452	0.276
128.1	1.180	0.900	0.572	0.555	0.003	-0.321	-0.654	-0.489	0.570	0.382	0.211
129.5	1.170	0.885	0.561	0.551	-0.001	-0.321	-0.642	-0.476	0.589	0.305	0.118
130.9	1.154	0.868	0.546	0.538	-0.003	-0.313	-0.627	-0.456	0.536	0.225	0.114
132.3	1.135	0.845	0.530	0.524	-0.003	-0.314	-0.619	-0.440	0.476	0.173	-0.012
133.7	1.116	0.817	0.507	0.507	-0.003	-0.311	-0.615	-0.432	0.402	0.214	-0.024
135.1	1.087	0.791	0.478	0.485	-0.010	-0.304	-0.614	-0.420	0.350	0.260	0.081
136.5	1.061	0.757	0.446	0.460	-0.017	-0.297	-0.628	-0.406	0.348	0.303	0.086
137.9	1.031	0.719	0.416	0.439	-0.018	-0.294	-0.653	-0.403	0.403	0.280	0.092
139.3	0.998	0.685	0.385	0.415	-0.021	-0.297	-0.684	-0.425	0.392	0.247	0.092
140.8	0.969	0.651	0.353	0.390	-0.026	-0.302	-0.701	-0.442	0.343	0.227	0.099
142.2	0.942	0.617	0.325	0.375	-0.032	-0.297	-0.716	-0.448	0.314	0.174	0.109
143.6	0.916	0.588	0.307	0.355	-0.036	-0.293	-0.745	-0.460	0.267	0.136	0.078
145.0	0.891	0.559	0.282	0.335	-0.036	-0.295	-0.766	-0.481	0.218	0.117	0.042
146.4	0.871	0.538	0.254	0.315	-0.039	-0.300	-0.781	-0.492	0.217	0.125	0.017
147.8	0.855	0.523	0.231	0.295	-0.040	-0.306	-0.809	-0.511	0.218	0.118	0.003
149.2	0.842	0.500	0.210	0.279	-0.043	-0.314	-0.835	-0.547	0.208	0.113	0.015
150.6	0.827	0.480	0.192	0.263	-0.047	-0.326	-0.870	-0.584	0.203	0.109	0.020
152.0	0.810	0.462	0.177	0.245	-0.052	-0.335	-0.897	-0.619	0.209	0.100	0.021
153.4	0.793	0.444	0.158	0.228	-0.059	-0.341	-0.911	-0.638	0.204	0.096	0.016
154.8	0.777	0.425	0.140	0.216	-0.066	-0.347	-0.928	-0.652	0.194	0.101	0.004
156.2	0.763	0.411	0.128	0.204	-0.067	-0.348	-0.940	-0.658	0.189	0.103	0.009
157.6	0.754	0.401	0.117	0.193	-0.066	-0.351	-0.956	-0.666	0.184	0.099	-0.003
159.0	0.746	0.390	0.108	0.185	-0.064	-0.355	-0.972	-0.680	0.185	0.101	-0.007
160.4	0.736	0.380	0.097	0.175	-0.065	-0.356	-0.987	-0.688	0.185	0.090	-0.010
161.8	0.728	0.372	0.086	0.168	-0.062	-0.366	-1.002	-0.695	0.180	0.085	-0.014
163.3	0.722	0.363	0.081	0.169	-0.063	-0.377	-1.030	-0.699	0.194	0.075	-0.008
164.7	0.715	0.356	0.080	0.168	-0.065	-0.380	-1.049	-0.710	0.208	0.074	-0.007
166.1	0.709	0.353	0.078	0.160	-0.067	-0.385	-1.056	-0.705	0.192	0.093	-0.007
167.5	0.704	0.350	0.072	0.156	-0.067	-0.389	-1.062	-0.704	0.181	0.101	0.001
168.9	0.703	0.348	0.068	0.151	-0.064	-0.400	-1.080	-0.707	0.194	0.100	-0.001
170.3	0.701	0.347	0.066	0.148	-0.067	-0.401	-1.098	-0.721	0.207	0.101	-0.004
171.7	0.698	0.341	0.065	0.146	-0.071	-0.401	-1.109	-0.741	0.221	0.106	0.002
173.1	0.700	0.340	0.064	0.145	-0.070	-0.404	-1.112	-0.733	0.218	0.102	0.011
174.5	0.700	0.345	0.065	0.149	-0.065	-0.403	-1.135	-0.725	0.215	0.107	0.011
175.9	0.704	0.345	0.070	0.152	-0.069	-0.401	-1.153	-0.734	0.234	0.121	0.022
177.3	0.702	0.343	0.075	0.153	-0.071	-0.407	-1.138	-0.749	0.265	0.132	0.034
178.7	0.698	0.344	0.078	0.155	-0.070	-0.403	-1.155	-0.751	0.274	0.139	0.047
180.1	0.700	0.347	0.080	0.152	-0.072	-0.401	-1.156	-0.736	0.283	0.153	0.058
181.5	0.706	0.351	0.080	0.151	-0.072	-0.400	-1.142	-0.735	0.326	0.191	0.066
182.9	0.712	0.356	0.079	0.156	-0.071	-0.389	-1.156	-0.737	0.354	0.219	0.079
184.3	0.715	0.360	0.086	0.166	-0.064	-0.373	-1.171	-0.734	0.372	0.229	0.090

Table 25. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.717	0.363	0.098	0.179	-0.053	-0.363	-1.172	-0.736	0.398	0.248	0.107
187.2	0.719	0.369	0.112	0.187	-0.049	-0.353	-1.172	-0.737	0.425	0.281	0.117
188.6	0.726	0.379	0.126	0.199	-0.039	-0.344	-1.166	-0.725	0.430	0.309	0.142
190.0	0.735	0.388	0.140	0.211	-0.032	-0.342	-1.155	-0.718	0.464	0.326	0.152
191.4	0.747	0.408	0.155	0.226	-0.032	-0.340	-1.137	-0.717	0.480	0.347	0.163
192.8	0.763	0.429	0.177	0.250	-0.026	-0.341	-1.142	-0.713	0.508	0.377	0.191
194.2	0.783	0.450	0.203	0.271	-0.027	-0.341	-1.117	-0.714	0.540	0.415	0.211
195.6	0.805	0.477	0.225	0.288	-0.030	-0.338	-1.088	-0.708	0.589	0.454	0.221
197.0	0.828	0.504	0.247	0.300	-0.026	-0.331	-1.091	-0.696	0.638	0.493	0.240
198.4	0.856	0.534	0.267	0.319	-0.022	-0.326	-1.055	-0.696	0.647	0.527	0.271
199.8	0.882	0.558	0.290	0.337	-0.019	-0.331	-1.041	-0.690	0.671	0.562	0.291
201.2	0.906	0.583	0.316	0.356	-0.022	-0.335	-0.993	-0.671	0.747	0.589	0.315
202.6	0.929	0.613	0.343	0.378	-0.018	-0.336	-0.914	-0.644	0.797	0.617	0.317
204.0	0.956	0.644	0.367	0.394	-0.010	-0.333	-0.883	-0.621	0.835	0.650	0.330
205.4	0.982	0.673	0.390	0.418	-0.004	-0.331	-0.837	-0.594	0.879	0.672	0.343
206.8	1.005	0.699	0.419	0.444	0.002	-0.328	-0.785	-0.563	0.878	0.669	0.329
208.3	1.024	0.727	0.446	0.464	0.004	-0.331	-0.762	-0.531	0.885	0.669	0.343
209.7	1.043	0.752	0.470	0.485	0.004	-0.328	-0.768	-0.500	0.859	0.675	0.338
211.1	1.059	0.774	0.490	0.497	0.008	-0.333	-0.756	-0.490	0.762	0.670	0.312
212.5	1.074	0.795	0.502	0.503	0.004	-0.333	-0.748	-0.479	0.631	0.585	0.302
213.9	1.089	0.803	0.502	0.503	0.002	-0.328	-0.738	-0.480	0.512	0.449	0.276
215.3	1.095	0.803	0.498	0.500	-0.003	-0.336	-0.709	-0.485	0.463	0.434	0.277
216.7	1.091	0.800	0.494	0.497	-0.007	-0.337	-0.701	-0.480	0.450	0.472	0.242
218.1	1.081	0.791	0.483	0.488	-0.006	-0.332	-0.712	-0.467	0.465	0.399	0.151
219.5	1.069	0.774	0.469	0.474	-0.003	-0.332	-0.714	-0.459	0.419	0.270	0.120
220.9	1.052	0.750	0.448	0.456	-0.006	-0.335	-0.709	-0.466	0.365	0.228	0.081
222.3	1.030	0.725	0.424	0.439	-0.010	-0.338	-0.714	-0.458	0.360	0.263	0.052
223.7	1.009	0.703	0.404	0.428	-0.011	-0.331	-0.710	-0.454	0.331	0.297	0.097
225.1	0.987	0.676	0.383	0.416	-0.015	-0.328	-0.710	-0.450	0.340	0.293	0.118
226.5	0.965	0.647	0.363	0.396	-0.019	-0.329	-0.703	-0.446	0.345	0.321	0.158
227.9	0.939	0.617	0.339	0.376	-0.023	-0.328	-0.692	-0.445	0.312	0.328	0.185
229.3	0.911	0.589	0.311	0.355	-0.027	-0.329	-0.693	-0.433	0.329	0.296	0.165
230.8	0.889	0.567	0.286	0.335	-0.025	-0.334	-0.699	-0.431	0.340	0.234	0.102
232.2	0.873	0.545	0.261	0.319	-0.028	-0.330	-0.703	-0.425	0.328	0.150	0.034
233.6	0.858	0.523	0.239	0.297	-0.038	-0.327	-0.715	-0.429	0.300	0.078	0.023
235.0	0.841	0.499	0.215	0.277	-0.045	-0.337	-0.741	-0.449	0.228	0.091	0.018
236.4	0.823	0.476	0.194	0.260	-0.049	-0.341	-0.778	-0.478	0.189	0.133	0.025
237.8	0.805	0.457	0.173	0.247	-0.052	-0.347	-0.800	-0.512	0.164	0.138	0.051
239.2	0.791	0.442	0.157	0.233	-0.058	-0.339	-0.810	-0.528	0.151	0.134	0.057
240.6	0.777	0.428	0.146	0.215	-0.058	-0.345	-0.837	-0.549	0.171	0.138	0.047
242.0	0.765	0.410	0.128	0.202	-0.056	-0.356	-0.865	-0.577	0.174	0.126	0.044
243.4	0.753	0.395	0.112	0.193	-0.058	-0.358	-0.887	-0.612	0.178	0.117	0.043
244.8	0.741	0.383	0.101	0.180	-0.065	-0.363	-0.909	-0.631	0.177	0.113	0.040
246.2	0.732	0.370	0.091	0.169	-0.066	-0.374	-0.914	-0.629	0.170	0.110	0.031

Table 25. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.724	0.361	0.080	0.163	-0.066	-0.375	-0.920	-0.635	0.174	0.102	0.032
249.0	0.716	0.355	0.071	0.153	-0.066	-0.374	-0.935	-0.648	0.196	0.092	0.031
250.4	0.710	0.347	0.064	0.146	-0.058	-0.377	-0.941	-0.663	0.211	0.087	0.027
251.8	0.704	0.337	0.056	0.146	-0.058	-0.380	-0.956	-0.671	0.191	0.076	0.019
253.3	0.696	0.329	0.054	0.147	-0.061	-0.385	-0.971	-0.683	0.184	0.069	0.018
254.7	0.689	0.327	0.059	0.146	-0.066	-0.384	-0.992	-0.698	0.176	0.064	0.025
256.1	0.688	0.327	0.056	0.148	-0.068	-0.392	-1.014	-0.695	0.186	0.052	0.023
257.5	0.690	0.328	0.055	0.141	-0.069	-0.396	-1.017	-0.692	0.196	0.062	0.039
258.9	0.690	0.330	0.052	0.132	-0.072	-0.396	-1.033	-0.694	0.201	0.075	0.031
260.3	0.692	0.325	0.044	0.129	-0.073	-0.396	-1.047	-0.692	0.219	0.073	0.036
261.7	0.689	0.323	0.043	0.130	-0.077	-0.399	-1.049	-0.692	0.242	0.084	0.028
263.1	0.687	0.326	0.045	0.125	-0.081	-0.394	-1.067	-0.697	0.253	0.082	0.027
264.5	0.691	0.325	0.041	0.122	-0.080	-0.387	-1.091	-0.705	0.244	0.094	0.040
265.9	0.692	0.321	0.038	0.127	-0.081	-0.393	-1.107	-0.716	0.255	0.102	0.038
267.3	0.687	0.319	0.047	0.133	-0.082	-0.397	-1.126	-0.734	0.277	0.087	0.048
268.7	0.683	0.320	0.056	0.136	-0.085	-0.400	-1.143	-0.752	0.292	0.091	0.052
270.1	0.687	0.323	0.060	0.137	-0.089	-0.403	-1.123	-0.747	0.298	0.100	0.061
271.5	0.693	0.333	0.060	0.140	-0.091	-0.397	-1.133	-0.735	0.292	0.116	0.073
272.9	0.702	0.344	0.064	0.143	-0.086	-0.389	-1.137	-0.722	0.318	0.129	0.079
274.3	0.711	0.349	0.073	0.153	-0.079	-0.380	-1.136	-0.717	0.373	0.145	0.091
275.8	0.713	0.354	0.082	0.165	-0.071	-0.374	-1.155	-0.712	0.396	0.169	0.107
277.2	0.716	0.357	0.095	0.176	-0.064	-0.370	-1.128	-0.707	0.425	0.197	0.119
278.6	0.723	0.366	0.109	0.189	-0.063	-0.360	-1.166	-0.705	0.455	0.222	0.124
280.0	0.733	0.381	0.128	0.206	-0.056	-0.355	-1.167	-0.699	0.453	0.254	0.128
281.4	0.749	0.404	0.152	0.224	-0.051	-0.350	-1.164	-0.696	0.486	0.278	0.138
282.8	0.770	0.428	0.172	0.241	-0.044	-0.352	-1.156	-0.698	0.512	0.295	0.163
284.2	0.793	0.452	0.195	0.261	-0.043	-0.352	-1.121	-0.700	0.529	0.325	0.182
285.6	0.816	0.482	0.220	0.282	-0.038	-0.350	-1.125	-0.698	0.543	0.356	0.203
287.0	0.845	0.514	0.247	0.304	-0.033	-0.349	-1.122	-0.695	0.565	0.396	0.221
288.4	0.878	0.547	0.276	0.332	-0.033	-0.345	-1.114	-0.684	0.599	0.429	0.242
289.8	0.907	0.579	0.312	0.360	-0.031	-0.345	-1.095	-0.670	0.630	0.466	0.268
291.2	0.935	0.611	0.348	0.386	-0.026	-0.343	-1.034	-0.661	0.662	0.494	0.276
292.6	0.964	0.649	0.380	0.409	-0.022	-0.339	-0.978	-0.645	0.691	0.512	0.271
294.0	0.998	0.691	0.408	0.425	-0.015	-0.332	-0.931	-0.620	0.706	0.519	0.270
295.4	1.031	0.728	0.428	0.445	-0.009	-0.327	-0.874	-0.598	0.700	0.516	0.266
296.8	1.061	0.754	0.450	0.465	-0.002	-0.323	-0.820	-0.568	0.734	0.540	0.269
298.3	1.086	0.784	0.479	0.491	0.002	-0.324	-0.792	-0.531	0.786	0.575	0.270
299.7	1.106	0.811	0.510	0.522	0.009	-0.325	-0.787	-0.499	0.778	0.577	0.292
301.1	1.125	0.835	0.539	0.540	0.011	-0.321	-0.770	-0.468	0.737	0.549	0.299
302.5	1.140	0.860	0.560	0.552	0.011	-0.325	-0.745	-0.467	0.667	0.522	0.271
303.9	1.156	0.878	0.569	0.558	0.009	-0.329	-0.744	-0.470	0.561	0.525	0.290
305.3	1.169	0.887	0.570	0.560	0.005	-0.320	-0.736	-0.466	0.503	0.534	0.304
306.7	1.171	0.889	0.568	0.558	0.000	-0.320	-0.739	-0.470	0.501	0.551	0.286
308.1	1.169	0.884	0.562	0.550	-0.001	-0.317	-0.714	-0.471	0.531	0.472	0.252

Table 25. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	1.160	0.866	0.544	0.535	0.001	-0.312	-0.692	-0.466	0.494	0.294	0.181
310.9	1.142	0.846	0.525	0.521	-0.003	-0.312	-0.678	-0.448	0.437	0.233	0.082
312.3	1.122	0.825	0.504	0.508	-0.005	-0.312	-0.661	-0.418	0.407	0.199	0.008
313.7	1.103	0.797	0.484	0.489	-0.006	-0.311	-0.661	-0.401	0.346	0.155	-0.016
315.1	1.077	0.770	0.459	0.476	-0.013	-0.308	-0.675	-0.395	0.309	0.176	0.005
316.5	1.051	0.741	0.435	0.455	-0.021	-0.309	-0.701	-0.398	0.289	0.251	0.024
317.9	1.023	0.709	0.407	0.432	-0.026	-0.307	-0.703	-0.416	0.280	0.364	0.042
319.3	0.994	0.675	0.376	0.411	-0.031	-0.300	-0.697	-0.421	0.306	0.347	0.076
320.8	0.966	0.643	0.346	0.384	-0.034	-0.302	-0.731	-0.428	0.326	0.261	0.096
322.2	0.941	0.613	0.316	0.361	-0.039	-0.305	-0.761	-0.453	0.264	0.183	0.101
323.6	0.919	0.585	0.290	0.341	-0.044	-0.307	-0.775	-0.474	0.189	0.136	0.063
325.0	0.896	0.561	0.264	0.321	-0.048	-0.307	-0.796	-0.497	0.153	0.132	0.008
326.4	0.876	0.535	0.242	0.304	-0.054	-0.311	-0.827	-0.515	0.144	0.123	0.003
327.8	0.858	0.514	0.220	0.287	-0.057	-0.307	-0.860	-0.552	0.166	0.120	0.028
329.2	0.842	0.496	0.202	0.268	-0.059	-0.306	-0.861	-0.584	0.172	0.120	0.023
330.6	0.829	0.480	0.185	0.253	-0.056	-0.318	-0.862	-0.590	0.159	0.112	0.018
332.0	0.814	0.464	0.169	0.242	-0.057	-0.328	-0.863	-0.585	0.175	0.108	0.006
333.4	0.800	0.445	0.156	0.226	-0.066	-0.331	-0.874	-0.594	0.207	0.108	0.010
334.8	0.787	0.430	0.140	0.214	-0.071	-0.333	-0.885	-0.597	0.190	0.116	0.017
336.2	0.778	0.419	0.128	0.207	-0.075	-0.336	-0.886	-0.591	0.157	0.121	0.010
337.6	0.769	0.413	0.124	0.204	-0.074	-0.339	-0.905	-0.607	0.161	0.119	0.016
339.0	0.762	0.406	0.119	0.191	-0.078	-0.341	-0.921	-0.626	0.166	0.105	0.017
340.4	0.756	0.397	0.109	0.180	-0.078	-0.339	-0.935	-0.642	0.175	0.081	0.021
341.8	0.749	0.389	0.098	0.181	-0.070	-0.345	-0.948	-0.646	0.168	0.077	0.025
343.3	0.741	0.382	0.094	0.183	-0.074	-0.353	-0.967	-0.632	0.176	0.071	0.019
344.7	0.735	0.378	0.096	0.177	-0.075	-0.356	-0.978	-0.615	0.175	0.072	0.008
346.1	0.733	0.374	0.092	0.171	-0.071	-0.357	-0.990	-0.623	0.176	0.077	0.009
347.5	0.730	0.372	0.088	0.174	-0.066	-0.357	-1.008	-0.645	0.190	0.080	0.006
348.9	0.726	0.371	0.090	0.173	-0.063	-0.360	-1.025	-0.671	0.201	0.084	0.004
350.3	0.723	0.367	0.092	0.174	-0.067	-0.370	-1.044	-0.694	0.194	0.083	0.005
351.7	0.722	0.363	0.092	0.179	-0.076	-0.364	-1.058	-0.708	0.197	0.085	0.013
353.1	0.723	0.368	0.093	0.177	-0.080	-0.360	-1.068	-0.716	0.220	0.094	0.023
354.5	0.728	0.372	0.094	0.174	-0.073	-0.367	-1.090	-0.732	0.219	0.095	0.035
355.9	0.731	0.369	0.094	0.177	-0.068	-0.373	-1.086	-0.731	0.224	0.096	0.044
357.3	0.727	0.369	0.103	0.181	-0.073	-0.373	-1.065	-0.726	0.245	0.099	0.043
358.7	0.723	0.373	0.110	0.184	-0.071	-0.369	-1.076	-0.724	0.261	0.096	0.052

Table 26. Modified unsteady pressure coefficients around the body at x/l = 0.90. $C_T/\sigma = 0.0657$, $\mu = 0.231$, $\alpha_s = -3.0°$, $\theta = 10.4°$, $A_1 = -0.4°$, $B_1 = 3.8°$.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.011	-0.307	-0.424	-0.642	-0.869	-1.067	-1.055	-0.682	-0.465	0.164
1.5	0.009	-0.311	-0.414	-0.637	-0.875	-1.062	-1.055	-0.693	-0.459	0.164
2.9	0.008	-0.302	-0.416	-0.638	-0.869	-1.074	-1.048	-0.697	-0.466	0.164
4.3	0.006	-0.306	-0.417	-0.636	-0.868	-1.070	-1.045	-0.693	-0.467	0.163
5.8	0.008	-0.315	-0.406	-0.633	-0.875	-1.055	-1.042	-0.691	-0.470	0.162
7.2	0.012	-0.308	-0.415	-0.636	-0.882	-1.055	-1.032	-0.684	-0.462	0.162
8.6	0.011	-0.310	-0.414	-0.630	-0.891	-1.075	-1.026	-0.680	-0.454	0.164
10.0	0.009	-0.299	-0.411	-0.641	-0.885	-1.061	-1.023	-0.679	-0.457	0.166
11.4	0.025	-0.298	-0.418	-0.645	-0.888	-1.052	-1.018	-0.677	-0.464	0.167
12.8	0.033	-0.302	-0.427	-0.641	-0.899	-1.059	-1.013	-0.675	-0.464	0.168
14.2	0.029	-0.310	-0.432	-0.651	-0.906	-1.045	-1.008	-0.673	-0.452	0.167
15.6	0.017	-0.308	-0.429	-0.654	-0.905	-1.039	-1.009	-0.675	-0.458	0.167
17.0	0.025	-0.312	-0.431	-0.657	-0.893	-1.042	-0.999	-0.686	-0.466	0.167
18.4	0.023	-0.318	-0.433	-0.655	-0.870	-1.031	-0.982	-0.683	-0.463	0.167
19.8	0.024	-0.308	-0.426	-0.645	-0.845	-0.980	-0.955	-0.668	-0.458	0.168
21.2	0.036	-0.311	-0.405	-0.628	-0.812	-0.939	-0.915	-0.655	-0.447	0.168
22.6	0.031	-0.307	-0.397	-0.619	-0.775	-0.912	-0.879	-0.641	-0.441	0.170
24.0	0.032	-0.299	-0.380	-0.605	-0.748	-0.867	-0.833	-0.634	-0.433	0.169
25.4	0.022	-0.281	-0.362	-0.587	-0.735	-0.838	-0.795	-0.621	-0.425	0.169
26.8	0.020	-0.263	-0.354	-0.578	-0.728	-0.810	-0.774	-0.583	-0.409	0.168
28.3	0.024	-0.255	-0.362	-0.573	-0.728	-0.799	-0.764	-0.558	-0.376	0.168
29.7	0.022	-0.255	-0.372	-0.578	-0.724	-0.801	-0.752	-0.542	-0.358	0.170
31.1	0.024	-0.267	-0.364	-0.580	-0.707	-0.772	-0.724	-0.530	-0.357	0.171
32.5	0.020	-0.268	-0.357	-0.579	-0.702	-0.743	-0.696	-0.528	-0.354	0.170
33.9	0.024	-0.274	-0.378	-0.589	-0.705	-0.751	-0.686	-0.515	-0.345	0.170
35.3	0.033	-0.282	-0.387	-0.595	-0.714	-0.763	-0.698	-0.489	-0.322	0.171
36.7	0.027	-0.290	-0.395	-0.611	-0.720	-0.766	-0.698	-0.487	-0.311	0.173
38.1	0.027	-0.304	-0.416	-0.621	-0.729	-0.765	-0.698	-0.489	-0.317	0.172
39.5	0.024	-0.322	-0.432	-0.630	-0.738	-0.764	-0.692	-0.502	-0.337	0.173
40.9	0.015	-0.338	-0.434	-0.637	-0.737	-0.788	-0.698	-0.504	-0.348	0.174
42.3	0.027	-0.333	-0.431	-0.645	-0.742	-0.799	-0.715	-0.485	-0.327	0.175
43.7	0.023	-0.334	-0.443	-0.648	-0.734	-0.781	-0.720	-0.490	-0.319	0.175
45.1	0.014	-0.341	-0.442	-0.639	-0.738	-0.794	-0.732	-0.475	-0.315	0.174
46.5	0.007	-0.337	-0.437	-0.640	-0.739	-0.805	-0.736	-0.458	-0.306	0.174
47.9	0.000	-0.332	-0.431	-0.629	-0.731	-0.796	-0.749	-0.460	-0.300	0.173
49.3	-0.003	-0.320	-0.420	-0.629	-0.741	-0.824	-0.770	-0.454	-0.289	0.174
50.8	-0.004	-0.328	-0.431	-0.631	-0.743	-0.841	-0.793	-0.465	-0.288	0.175
52.2	0.001	-0.326	-0.433	-0.630	-0.749	-0.849	-0.822	-0.464	-0.296	0.174
53.6	0.002	-0.316	-0.426	-0.634	-0.766	-0.880	-0.861	-0.467	-0.287	0.175
55.0	0.006	-0.322	-0.436	-0.639	-0.774	-0.892	-0.890	-0.511	-0.319	0.174
56.4	0.006	-0.322	-0.436	-0.644	-0.784	-0.939	-0.928	-0.536	-0.343	0.172
57.8	-0.003	-0.324	-0.430	-0.643	-0.799	-0.967	-0.957	-0.571	-0.353	0.173
59.2	0.008	-0.325	-0.450	-0.648	-0.802	-0.974	-0.980	-0.599	-0.374	0.173
60.6	0.007	-0.335	-0.448	-0.656	-0.806	-0.981	-0.996	-0.620	-0.402	0.174

Table 26. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.008	-0.337	-0.454	-0.663	-0.816	-0.987	-1.009	-0.647	-0.437	0.174
63.4	0.014	-0.337	-0.465	-0.669	-0.829	-0.988	-1.021	-0.660	-0.457	0.174
64.8	0.012	-0.345	-0.466	-0.673	-0.834	-0.982	-1.024	-0.653	-0.455	0.173
66.2	0.006	-0.353	-0.469	-0.672	-0.827	-0.990	-1.025	-0.629	-0.440	0.172
67.6	0.004	-0.352	-0.451	-0.668	-0.826	-1.021	-1.033	-0.636	-0.429	0.169
69.0	0.004	-0.336	-0.442	-0.656	-0.833	-1.018	-1.040	-0.667	-0.447	0.164
70.4	-0.003	-0.332	-0.436	-0.646	-0.842	-1.020	-1.047	-0.665	-0.460	0.161
71.8	-0.015	-0.319	-0.433	-0.646	-0.851	-1.038	-1.070	-0.660	-0.450	0.160
73.3	-0.019	-0.315	-0.435	-0.647	-0.858	-1.100	-1.083	-0.663	-0.450	0.161
74.7	-0.017	-0.316	-0.428	-0.644	-0.871	-1.137	-1.102	-0.692	-0.462	0.162
76.1	-0.018	-0.303	-0.432	-0.640	-0.885	-1.116	-1.112	-0.713	-0.484	0.162
77.5	-0.022	-0.303	-0.414	-0.638	-0.891	-1.124	-1.123	-0.728	-0.502	0.161
78.9	-0.014	-0.301	-0.421	-0.640	-0.894	-1.156	-1.141	-0.744	-0.522	0.160
80.3	-0.008	-0.306	-0.423	-0.637	-0.906	-1.177	-1.140	-0.744	-0.526	0.160
81.7	-0.003	-0.306	-0.417	-0.636	-0.920	-1.215	-1.146	-0.743	-0.527	0.159
83.1	-0.003	-0.296	-0.432	-0.648	-0.926	-1.244	-1.162	-0.753	-0.539	0.158
84.5	-0.015	-0.310	-0.426	-0.640	-0.949	-1.234	-1.160	-0.767	-0.537	0.156
85.9	-0.002	-0.302	-0.413	-0.636	-0.955	-1.260	-1.166	-0.762	-0.529	0.154
87.3	0.001	-0.295	-0.412	-0.644	-0.961	-1.285	-1.180	-0.773	-0.533	0.154
88.7	-0.004	-0.302	-0.408	-0.638	-0.971	-1.290	-1.174	-0.771	-0.546	0.155
90.1	-0.011	-0.300	-0.410	-0.635	-0.972	-1.258	-1.172	-0.753	-0.540	0.156
91.5	-0.010	-0.312	-0.416	-0.643	-0.985	-1.256	-1.177	-0.753	-0.535	0.157
92.9	-0.005	-0.302	-0.416	-0.645	-0.983	-1.247	-1.168	-0.757	-0.543	0.156
94.3	-0.001	-0.293	-0.425	-0.645	-0.969	-1.247	-1.161	-0.739	-0.534	0.155
95.8	0.003	-0.309	-0.424	-0.652	-0.973	-1.213	-1.157	-0.728	-0.519	0.154
97.2	0.000	-0.321	-0.428	-0.647	-0.974	-1.212	-1.149	-0.719	-0.499	0.155
98.6	-0.002	-0.316	-0.423	-0.650	-0.964	-1.210	-1.140	-0.713	-0.495	0.155
100.0	0.002	-0.316	-0.426	-0.655	-0.953	-1.223	-1.127	-0.709	-0.507	0.156
101.4	0.004	-0.307	-0.423	-0.649	-0.956	-1.208	-1.118	-0.709	-0.498	0.157
102.8	0.003	-0.304	-0.424	-0.655	-0.948	-1.189	-1.113	-0.707	-0.492	0.158
104.2	0.005	-0.315	-0.431	-0.653	-0.938	-1.198	-1.097	-0.699	-0.496	0.158
105.6	0.002	-0.313	-0.425	-0.644	-0.926	-1.151	-1.082	-0.700	-0.488	0.157
107.0	-0.006	-0.308	-0.426	-0.650	-0.900	-1.135	-1.065	-0.699	-0.486	0.158
108.4	-0.001	-0.310	-0.427	-0.647	-0.886	-1.124	-1.033	-0.698	-0.485	0.159
109.8	0.005	-0.315	-0.423	-0.640	-0.854	-1.042	-0.985	-0.684	-0.481	0.158
111.2	0.017	-0.305	-0.421	-0.631	-0.807	-0.975	-0.932	-0.659	-0.473	0.159
112.6	0.020	-0.301	-0.407	-0.613	-0.770	-0.902	-0.870	-0.645	-0.469	0.160
114.0	0.010	-0.291	-0.389	-0.598	-0.743	-0.874	-0.809	-0.618	-0.449	0.160
115.4	0.005	-0.281	-0.374	-0.588	-0.720	-0.818	-0.763	-0.592	-0.420	0.160
116.8	0.010	-0.279	-0.373	-0.588	-0.695	-0.741	-0.713	-0.580	-0.406	0.160
118.3	0.017	-0.273	-0.358	-0.573	-0.677	-0.715	-0.667	-0.550	-0.388	0.160
119.7	0.012	-0.272	-0.357	-0.577	-0.672	-0.692	-0.635	-0.529	-0.367	0.161
121.1	0.012	-0.281	-0.366	-0.581	-0.676	-0.687	-0.614	-0.507	-0.352	0.162
122.5	0.015	-0.288	-0.383	-0.593	-0.676	-0.682	-0.605	-0.505	-0.344	0.164

Table 26. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.016	-0.299	-0.407	-0.611	-0.684	-0.681	-0.608	-0.502	-0.339	0.165
125.3	0.016	-0.300	-0.415	-0.620	-0.686	-0.677	-0.609	-0.506	-0.340	0.166
126.7	0.018	-0.314	-0.416	-0.625	-0.685	-0.652	-0.603	-0.515	-0.340	0.167
128.1	0.018	-0.319	-0.401	-0.621	-0.680	-0.654	-0.588	-0.507	-0.339	0.168
129.5	0.016	-0.317	-0.415	-0.622	-0.668	-0.642	-0.564	-0.499	-0.332	0.170
130.9	0.014	-0.328	-0.422	-0.620	-0.659	-0.627	-0.552	-0.474	-0.328	0.171
132.3	0.016	-0.326	-0.419	-0.616	-0.655	-0.619	-0.550	-0.451	-0.315	0.173
133.7	0.017	-0.318	-0.406	-0.614	-0.648	-0.615	-0.544	-0.445	-0.304	0.174
135.1	0.013	-0.307	-0.404	-0.606	-0.643	-0.614	-0.550	-0.439	-0.286	0.174
136.5	0.010	-0.320	-0.405	-0.599	-0.651	-0.628	-0.564	-0.420	-0.261	0.174
137.9	0.010	-0.301	-0.396	-0.594	-0.657	-0.653	-0.592	-0.418	-0.255	0.173
139.3	0.013	-0.293	-0.397	-0.607	-0.675	-0.684	-0.627	-0.431	-0.261	0.173
140.8	0.025	-0.300	-0.401	-0.622	-0.687	-0.701	-0.645	-0.448	-0.274	0.174
142.2	0.022	-0.309	-0.434	-0.630	-0.692	-0.716	-0.667	-0.457	-0.289	0.175
143.6	0.027	-0.325	-0.426	-0.638	-0.709	-0.745	-0.705	-0.457	-0.288	0.176
145.0	0.023	-0.336	-0.430	-0.643	-0.713	-0.766	-0.736	-0.474	-0.300	0.176
146.4	0.013	-0.340	-0.431	-0.636	-0.719	-0.781	-0.759	-0.484	-0.301	0.176
147.8	0.016	-0.327	-0.419	-0.632	-0.725	-0.809	-0.800	-0.502	-0.307	0.175
149.2	0.015	-0.321	-0.420	-0.636	-0.732	-0.835	-0.843	-0.531	-0.330	0.175
150.6	0.019	-0.322	-0.433	-0.640	-0.755	-0.870	-0.879	-0.566	-0.354	0.174
152.0	0.025	-0.321	-0.436	-0.643	-0.776	-0.897	-0.910	-0.608	-0.387	0.173
153.4	0.019	-0.325	-0.443	-0.651	-0.783	-0.911	-0.940	-0.613	-0.419	0.173
154.8	0.023	-0.328	-0.439	-0.656	-0.788	-0.928	-0.965	-0.626	-0.421	0.172
156.2	0.020	-0.329	-0.442	-0.657	-0.799	-0.940	-0.973	-0.634	-0.429	0.170
157.6	0.013	-0.328	-0.431	-0.650	-0.808	-0.956	-0.993	-0.637	-0.426	0.168
159.0	0.012	-0.324	-0.426	-0.640	-0.806	-0.972	-1.006	-0.656	-0.435	0.165
160.4	-0.001	-0.317	-0.427	-0.638	-0.812	-0.987	-1.021	-0.663	-0.451	0.163
161.8	0.003	-0.315	-0.418	-0.640	-0.828	-1.002	-1.038	-0.661	-0.444	0.162
163.3	-0.003	-0.308	-0.409	-0.635	-0.825	-1.030	-1.064	-0.666	-0.439	0.161
164.7	-0.016	-0.302	-0.413	-0.633	-0.835	-1.049	-1.071	-0.687	-0.459	0.163
166.1	-0.011	-0.303	-0.408	-0.626	-0.848	-1.056	-1.069	-0.674	-0.463	0.163
167.5	-0.007	-0.294	-0.402	-0.624	-0.847	-1.062	-1.074	-0.664	-0.446	0.162
168.9	0.003	-0.298	-0.402	-0.618	-0.848	-1.080	-1.083	-0.665	-0.448	0.162
170.3	0.008	-0.290	-0.397	-0.610	-0.855	-1.098	-1.097	-0.686	-0.458	0.163
171.7	0.004	-0.284	-0.388	-0.611	-0.870	-1.109	-1.107	-0.718	-0.472	0.162
173.1	-0.002	-0.285	-0.393	-0.614	-0.877	-1.112	-1.104	-0.713	-0.488	0.162
174.5	-0.004	-0.278	-0.387	-0.612	-0.875	-1.135	-1.108	-0.694	-0.467	0.160
175.9	0.006	-0.276	-0.384	-0.610	-0.868	-1.153	-1.113	-0.700	-0.461	0.161
177.3	0.011	-0.280	-0.383	-0.610	-0.875	-1.138	-1.118	-0.723	-0.483	0.161
178.7	0.006	-0.277	-0.378	-0.609	-0.887	-1.155	-1.113	-0.722	-0.488	0.161
180.1	0.008	-0.271	-0.375	-0.610	-0.895	-1.156	-1.112	-0.719	-0.488	0.161
181.5	0.013	-0.279	-0.372	-0.613	-0.909	-1.142	-1.110	-0.704	-0.486	0.161
182.9	0.009	-0.284	-0.387	-0.623	-0.901	-1.156	-1.109	-0.709	-0.479	0.161
184.3	0.017	-0.284	-0.401	-0.624	-0.898	-1.171	-1.111	-0.715	-0.487	0.160

Table 26. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.016	-0.283	-0.399	-0.622	-0.912	-1.172	-1.115	-0.708	-0.478	0.160
187.2	0.023	-0.291	-0.391	-0.628	-0.920	-1.172	-1.110	-0.718	-0.486	0.161
188.6	0.030	-0.295	-0.399	-0.626	-0.922	-1.166	-1.102	-0.706	-0.485	0.161
190.0	0.020	-0.286	-0.399	-0.623	-0.922	-1.155	-1.102	-0.693	-0.474	0.162
191.4	0.018	-0.289	-0.403	-0.630	-0.917	-1.137	-1.093	-0.703	-0.471	0.162
192.8	0.033	-0.285	-0.403	-0.645	-0.911	-1.142	-1.084	-0.703	-0.475	0.162
194.2	0.027	-0.299	-0.416	-0.648	-0.922	-1.117	-1.076	-0.686	-0.476	0.161
195.6	0.019	-0.301	-0.422	-0.645	-0.915	-1.088	-1.062	-0.683	-0.466	0.160
197.0	0.020	-0.303	-0.407	-0.647	-0.904	-1.091	-1.053	-0.679	-0.466	0.160
198.4	0.022	-0.308	-0.413	-0.650	-0.888	-1.055	-1.032	-0.675	-0.463	0.160
199.8	0.025	-0.304	-0.405	-0.642	-0.865	-1.041	-0.997	-0.673	-0.461	0.160
201.2	0.027	-0.302	-0.390	-0.630	-0.843	-0.993	-0.958	-0.664	-0.451	0.161
202.6	0.024	-0.290	-0.394	-0.615	-0.810	-0.914	-0.913	-0.638	-0.444	0.161
204.0	0.027	-0.290	-0.386	-0.603	-0.768	-0.883	-0.858	-0.614	-0.429	0.162
205.4	0.028	-0.283	-0.362	-0.592	-0.726	-0.837	-0.803	-0.597	-0.416	0.162
206.8	0.025	-0.271	-0.357	-0.572	-0.705	-0.785	-0.759	-0.570	-0.397	0.163
208.3	0.026	-0.255	-0.339	-0.560	-0.698	-0.762	-0.730	-0.536	-0.367	0.164
209.7	0.029	-0.248	-0.341	-0.561	-0.694	-0.768	-0.712	-0.511	-0.341	0.165
211.1	0.030	-0.256	-0.367	-0.567	-0.704	-0.756	-0.696	-0.498	-0.334	0.167
212.5	0.029	-0.258	-0.357	-0.584	-0.706	-0.748	-0.691	-0.485	-0.326	0.168
213.9	0.031	-0.272	-0.376	-0.599	-0.712	-0.738	-0.685	-0.496	-0.305	0.169
215.3	0.040	-0.304	-0.401	-0.614	-0.703	-0.709	-0.662	-0.504	-0.306	0.170
216.7	0.040	-0.305	-0.397	-0.620	-0.697	-0.701	-0.647	-0.495	-0.320	0.172
218.1	0.028	-0.310	-0.411	-0.629	-0.706	-0.712	-0.658	-0.474	-0.309	0.174
219.5	0.026	-0.327	-0.416	-0.639	-0.706	-0.714	-0.652	-0.473	-0.300	0.175
220.9	0.028	-0.342	-0.429	-0.646	-0.708	-0.709	-0.641	-0.490	-0.314	0.177
222.3	0.026	-0.340	-0.432	-0.637	-0.715	-0.714	-0.654	-0.471	-0.318	0.177
223.7	0.016	-0.340	-0.433	-0.641	-0.707	-0.710	-0.653	-0.469	-0.290	0.177
225.1	0.013	-0.354	-0.441	-0.651	-0.701	-0.710	-0.649	-0.474	-0.304	0.177
226.5	0.007	-0.345	-0.438	-0.642	-0.703	-0.703	-0.651	-0.466	-0.303	0.176
227.9	0.003	-0.342	-0.437	-0.643	-0.700	-0.692	-0.645	-0.465	-0.295	0.174
229.3	0.008	-0.334	-0.432	-0.648	-0.685	-0.693	-0.651	-0.449	-0.292	0.174
230.8	0.009	-0.334	-0.424	-0.636	-0.690	-0.699	-0.664	-0.437	-0.280	0.174
232.2	0.011	-0.326	-0.429	-0.634	-0.689	-0.703	-0.678	-0.434	-0.270	0.173
233.6	0.003	-0.324	-0.434	-0.632	-0.689	-0.715	-0.701	-0.440	-0.263	0.173
235.0	-0.001	-0.321	-0.428	-0.629	-0.703	-0.741	-0.718	-0.452	-0.266	0.172
236.4	0.004	-0.319	-0.433	-0.640	-0.719	-0.778	-0.761	-0.481	-0.292	0.172
237.8	0.002	-0.327	-0.440	-0.637	-0.736	-0.800	-0.788	-0.506	-0.315	0.172
239.2	0.006	-0.332	-0.437	-0.644	-0.741	-0.810	-0.800	-0.511	-0.318	0.173
240.6	0.002	-0.335	-0.447	-0.647	-0.748	-0.837	-0.829	-0.539	-0.332	0.173
242.0	0.005	-0.332	-0.449	-0.648	-0.767	-0.865	-0.848	-0.572	-0.354	0.173
243.4	0.005	-0.338	-0.453	-0.665	-0.782	-0.887	-0.876	-0.613	-0.396	0.172
244.8	0.002	-0.349	-0.466	-0.670	-0.791	-0.909	-0.896	-0.628	-0.420	0.173
246.2	0.006	-0.351	-0.466	-0.674	-0.810	-0.914	-0.908	-0.619	-0.424	0.173

Table 26. Continued.

$$C_p \times 100 \text{ for orifice:}$$

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.006	-0.345	-0.469	-0.672	-0.805	-0.920	-0.922	-0.617	-0.422	0.170
249.0	0.005	-0.346	-0.459	-0.672	-0.805	-0.935	-0.934	-0.634	-0.415	0.166
250.4	0.006	-0.348	-0.437	-0.661	-0.816	-0.941	-0.944	-0.650	-0.424	0.165
251.8	0.005	-0.334	-0.452	-0.651	-0.815	-0.956	-0.954	-0.650	-0.429	0.163
253.3	0.000	-0.326	-0.439	-0.651	-0.825	-0.971	-0.971	-0.661	-0.435	0.163
254.7	-0.012	-0.319	-0.426	-0.647	-0.832	-0.992	-0.986	-0.671	-0.444	0.164
256.1	-0.013	-0.308	-0.422	-0.643	-0.839	-1.014	-0.982	-0.675	-0.451	0.164
257.5	-0.008	-0.304	-0.415	-0.639	-0.846	-1.017	-0.989	-0.669	-0.454	0.164
258.9	-0.003	-0.306	-0.410	-0.645	-0.849	-1.033	-0.999	-0.684	-0.454	0.163
260.3	-0.004	-0.309	-0.405	-0.636	-0.861	-1.047	-0.998	-0.678	-0.464	0.164
261.7	0.002	-0.304	-0.413	-0.634	-0.877	-1.049	-1.007	-0.672	-0.455	0.163
263.1	0.000	-0.307	-0.414	-0.634	-0.884	-1.067	-1.020	-0.682	-0.450	0.162
264.5	0.002	-0.310	-0.406	-0.630	-0.895	-1.091	-1.035	-0.690	-0.465	0.161
265.9	0.007	-0.311	-0.406	-0.632	-0.900	-1.107	-1.043	-0.701	-0.473	0.160
267.3	0.002	-0.300	-0.416	-0.635	-0.906	-1.126	-1.061	-0.722	-0.481	0.160
268.7	0.004	-0.297	-0.412	-0.637	-0.907	-1.143	-1.068	-0.739	-0.504	0.160
270.1	0.001	-0.304	-0.414	-0.635	-0.918	-1.123	-1.064	-0.724	-0.511	0.161
271.5	-0.003	-0.318	-0.416	-0.639	-0.940	-1.133	-1.063	-0.718	-0.505	0.160
272.9	-0.001	-0.307	-0.408	-0.640	-0.956	-1.137	-1.055	-0.704	-0.498	0.160
274.3	0.007	-0.293	-0.416	-0.647	-0.947	-1.136	-1.053	-0.705	-0.485	0.159
275.8	0.012	-0.302	-0.418	-0.646	-0.934	-1.155	-1.051	-0.694	-0.478	0.158
277.2	0.008	-0.309	-0.419	-0.642	-0.941	-1.128	-1.049	-0.692	-0.471	0.156
278.6	0.008	-0.303	-0.417	-0.653	-0.945	-1.166	-1.051	-0.688	-0.463	0.156
280.0	0.016	-0.307	-0.418	-0.654	-0.947	-1.167	-1.055	-0.677	-0.465	0.158
281.4	0.011	-0.320	-0.416	-0.653	-0.956	-1.164	-1.054	-0.677	-0.462	0.158
282.8	0.013	-0.312	-0.411	-0.653	-0.954	-1.156	-1.047	-0.677	-0.453	0.160
284.2	0.015	-0.305	-0.426	-0.651	-0.954	-1.121	-1.041	-0.682	-0.465	0.159
285.6	0.003	-0.304	-0.422	-0.653	-0.947	-1.125	-1.039	-0.684	-0.470	0.159
287.0	0.008	-0.302	-0.416	-0.655	-0.943	-1.122	-1.029	-0.685	-0.461	0.160
288.4	0.016	-0.307	-0.414	-0.660	-0.939	-1.114	-1.015	-0.660	-0.456	0.160
289.8	0.013	-0.311	-0.412	-0.661	-0.915	-1.095	-0.992	-0.664	-0.451	0.161
291.2	0.014	-0.321	-0.423	-0.654	-0.884	-1.034	-0.960	-0.649	-0.444	0.163
292.6	0.017	-0.316	-0.415	-0.648	-0.847	-0.978	-0.924	-0.628	-0.432	0.163
294.0	0.017	-0.310	-0.395	-0.637	-0.809	-0.931	-0.871	-0.618	-0.428	0.164
295.4	0.016	-0.300	-0.394	-0.615	-0.773	-0.874	-0.804	-0.597	-0.407	0.164
296.8	0.022	-0.280	-0.376	-0.600	-0.739	-0.820	-0.755	-0.577	-0.388	0.166
298.3	0.024	-0.268	-0.358	-0.590	-0.729	-0.792	-0.725	-0.543	-0.378	0.167
299.7	0.023	-0.271	-0.350	-0.592	-0.730	-0.787	-0.706	-0.497	-0.343	0.168
301.1	0.019	-0.272	-0.369	-0.603	-0.728	-0.770	-0.692	-0.472	-0.304	0.169
302.5	0.017	-0.294	-0.390	-0.611	-0.720	-0.745	-0.683	-0.473	-0.302	0.170
303.9	0.021	-0.297	-0.395	-0.619	-0.722	-0.744	-0.664	-0.482	-0.311	0.171
305.3	0.027	-0.297	-0.408	-0.621	-0.719	-0.736	-0.669	-0.481	-0.309	0.173
306.7	0.024	-0.316	-0.416	-0.636	-0.727	-0.739	-0.679	-0.473	-0.302	0.175
308.1	0.026	-0.321	-0.423	-0.650	-0.717	-0.714	-0.656	-0.485	-0.310	0.176

Table 26. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.024	-0.334	-0.428	-0.648	-0.700	-0.692	-0.626	-0.490	-0.318	0.175
310.9	0.022	-0.323	-0.423	-0.638	-0.692	-0.678	-0.597	-0.470	-0.316	0.176
312.3	0.023	-0.332	-0.422	-0.638	-0.677	-0.661	-0.594	-0.437	-0.303	0.177
313.7	0.022	-0.328	-0.411	-0.625	-0.672	-0.661	-0.605	-0.413	-0.268	0.177
315.1	0.015	-0.307	-0.393	-0.608	-0.674	-0.675	-0.616	-0.403	-0.236	0.179
316.5	0.011	-0.301	-0.388	-0.606	-0.677	-0.701	-0.634	-0.399	-0.234	0.178
317.9	0.017	-0.300	-0.395	-0.619	-0.686	-0.703	-0.638	-0.425	-0.239	0.176
319.3	0.014	-0.305	-0.414	-0.636	-0.686	-0.697	-0.651	-0.434	-0.249	0.176
320.8	0.025	-0.319	-0.419	-0.642	-0.696	-0.731	-0.692	-0.420	-0.241	0.178
322.2	0.029	-0.315	-0.417	-0.641	-0.719	-0.761	-0.723	-0.452	-0.252	0.179
323.6	0.026	-0.331	-0.439	-0.644	-0.736	-0.775	-0.752	-0.475	-0.286	0.181
325.0	0.025	-0.346	-0.442	-0.662	-0.736	-0.796	-0.778	-0.489	-0.297	0.180
326.4	0.023	-0.335	-0.445	-0.662	-0.741	-0.827	-0.814	-0.507	-0.305	0.179
327.8	0.023	-0.337	-0.445	-0.664	-0.752	-0.860	-0.853	-0.544	-0.330	0.180
329.2	0.023	-0.338	-0.447	-0.662	-0.764	-0.861	-0.862	-0.576	-0.367	0.179
330.6	0.024	-0.336	-0.448	-0.663	-0.755	-0.862	-0.870	-0.566	-0.368	0.178
332.0	0.023	-0.341	-0.462	-0.664	-0.756	-0.863	-0.879	-0.564	-0.366	0.178
333.4	0.018	-0.336	-0.451	-0.662	-0.762	-0.874	-0.895	-0.574	-0.373	0.177
334.8	0.015	-0.334	-0.440	-0.663	-0.765	-0.885	-0.903	-0.576	-0.375	0.176
336.2	0.018	-0.333	-0.442	-0.654	-0.766	-0.886	-0.923	-0.569	-0.373	0.175
337.6	0.008	-0.328	-0.433	-0.646	-0.767	-0.905	-0.945	-0.580	-0.369	0.173
339.0	0.014	-0.335	-0.427	-0.649	-0.772	-0.921	-0.967	-0.606	-0.392	0.173
340.4	0.009	-0.323	-0.428	-0.643	-0.782	-0.935	-0.975	-0.623	-0.405	0.172
341.8	-0.003	-0.307	-0.419	-0.639	-0.782	-0.948	-0.985	-0.616	-0.399	0.170
343.3	0.002	-0.308	-0.420	-0.638	-0.778	-0.967	-0.985	-0.610	-0.389	0.170
344.7	-0.002	-0.313	-0.417	-0.628	-0.795	-0.978	-0.992	-0.585	-0.369	0.171
346.1	-0.002	-0.303	-0.412	-0.627	-0.796	-0.990	-1.012	-0.592	-0.363	0.171
347.5	-0.001	-0.305	-0.406	-0.621	-0.788	-1.008	-1.026	-0.620	-0.383	0.171
348.9	0.005	-0.303	-0.393	-0.622	-0.801	-1.025	-1.043	-0.649	-0.424	0.171
350.3	0.009	-0.290	-0.403	-0.619	-0.817	-1.044	-1.049	-0.677	-0.439	0.170
351.7	0.011	-0.290	-0.404	-0.611	-0.829	-1.058	-1.061	-0.683	-0.453	0.171
353.1	0.012	-0.298	-0.403	-0.624	-0.833	-1.068	-1.070	-0.691	-0.467	0.171
354.5	0.006	-0.305	-0.402	-0.628	-0.846	-1.090	-1.070	-0.706	-0.479	0.170
355.9	0.005	-0.304	-0.413	-0.634	-0.858	-1.086	-1.065	-0.699	-0.486	0.168
357.3	0.004	-0.305	-0.419	-0.636	-0.869	-1.065	-1.066	-0.698	-0.466	0.166
358.7	0.015	-0.301	-0.420	-0.639	-0.868	-1.076	-1.063	-0.699	-0.472	0.165

Table 27. Modified unsteady pressure coefficients near the top centerline. $C_T/\sigma = 0.0820$, $\mu = 0.232$, $\alpha_s = -3.0°$, $\theta = 11.9°$, $A_1 = -1.3°$, $B_1 = 4.0°$.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
0.1	0.762	0.427	0.180	0.249	0.007	-0.330	-1.037	-0.676	0.246	0.125	0.067
1.5	0.767	0.434	0.188	0.253	0.006	-0.329	-1.032	-0.677	0.287	0.137	0.075
2.9	0.775	0.442	0.196	0.258	0.004	-0.323	-1.024	-0.674	0.297	0.147	0.092
4.3	0.785	0.453	0.204	0.268	0.006	-0.315	-1.008	-0.667	0.332	0.168	0.100
5.8	0.794	0.464	0.217	0.281	0.019	-0.306	-0.987	-0.667	0.378	0.182	0.103
7.2	0.801	0.472	0.232	0.299	0.025	-0.301	-0.984	-0.666	0.406	0.199	0.115
8.6	0.809	0.483	0.249	0.311	0.029	-0.297	-0.977	-0.662	0.429	0.226	0.135
10.0	0.821	0.496	0.269	0.330	0.038	-0.297	-0.969	-0.660	0.481	0.253	0.140
11.4	0.835	0.517	0.291	0.353	0.042	-0.299	-0.971	-0.662	0.502	0.288	0.149
12.8	0.855	0.543	0.320	0.370	0.046	-0.296	-0.966	-0.664	0.508	0.307	0.162
14.2	0.880	0.573	0.346	0.392	0.050	-0.298	-0.955	-0.659	0.558	0.345	0.185
15.6	0.908	0.602	0.369	0.422	0.055	-0.303	-0.948	-0.664	0.605	0.400	0.218
17.0	0.937	0.637	0.400	0.443	0.067	-0.298	-0.939	-0.656	0.620	0.454	0.247
18.4	0.971	0.672	0.427	0.459	0.070	-0.292	-0.924	-0.645	0.659	0.507	0.278
19.8	1.007	0.707	0.454	0.490	0.070	-0.296	-0.895	-0.635	0.731	0.544	0.313
21.2	1.037	0.740	0.494	0.521	0.076	-0.308	-0.858	-0.623	0.753	0.587	0.341
22.6	1.065	0.775	0.531	0.550	0.080	-0.309	-0.802	-0.607	0.789	0.618	0.358
24.0	1.098	0.816	0.567	0.574	0.085	-0.306	-0.745	-0.588	0.832	0.613	0.357
25.4	1.135	0.858	0.594	0.586	0.088	-0.304	-0.709	-0.563	0.887	0.613	0.349
26.8	1.171	0.899	0.610	0.608	0.094	-0.301	-0.694	-0.535	0.961	0.675	0.338
28.3	1.205	0.933	0.637	0.631	0.101	-0.301	-0.690	-0.506	0.971	0.716	0.354
29.7	1.232	0.956	0.663	0.651	0.103	-0.300	-0.689	-0.480	0.940	0.697	0.374
31.1	1.249	0.979	0.687	0.671	0.101	-0.294	-0.677	-0.463	0.883	0.684	0.365
32.5	1.265	1.003	0.711	0.686	0.103	-0.291	-0.655	-0.458	0.831	0.667	0.333
33.9	1.279	1.025	0.723	0.696	0.101	-0.292	-0.641	-0.449	0.746	0.579	0.310
35.3	1.291	1.035	0.728	0.698	0.097	-0.291	-0.654	-0.431	0.687	0.466	0.298
36.7	1.297	1.038	0.725	0.694	0.098	-0.289	-0.663	-0.427	0.613	0.370	0.261
38.1	1.296	1.029	0.717	0.687	0.101	-0.296	-0.671	-0.416	0.512	0.339	0.257
39.5	1.285	1.019	0.703	0.675	0.098	-0.302	-0.672	-0.402	0.500	0.365	0.188
40.9	1.269	1.003	0.682	0.659	0.089	-0.298	-0.673	-0.401	0.554	0.320	0.081
42.3	1.253	0.976	0.661	0.645	0.080	-0.301	-0.694	-0.392	0.582	0.239	-0.006
43.7	1.230	0.946	0.641	0.629	0.079	-0.307	-0.705	-0.392	0.548	0.202	0.043
45.1	1.201	0.917	0.617	0.613	0.078	-0.308	-0.697	-0.396	0.469	0.213	0.103
46.5	1.175	0.885	0.592	0.591	0.069	-0.308	-0.709	-0.388	0.435	0.268	0.092
47.9	1.144	0.853	0.560	0.564	0.060	-0.308	-0.728	-0.375	0.405	0.283	0.103
49.3	1.113	0.816	0.526	0.540	0.053	-0.311	-0.734	-0.366	0.382	0.278	0.097
50.8	1.077	0.779	0.496	0.514	0.053	-0.311	-0.752	-0.368	0.423	0.251	0.056
52.2	1.046	0.747	0.462	0.485	0.048	-0.310	-0.776	-0.369	0.429	0.233	0.041
53.6	1.023	0.713	0.429	0.464	0.037	-0.319	-0.807	-0.399	0.377	0.184	0.044
55.0	0.995	0.679	0.402	0.443	0.031	-0.324	-0.839	-0.445	0.285	0.158	0.026
56.4	0.969	0.649	0.376	0.419	0.027	-0.323	-0.862	-0.481	0.204	0.161	0.027
57.8	0.944	0.623	0.348	0.396	0.023	-0.330	-0.866	-0.501	0.163	0.148	0.018
59.2	0.921	0.600	0.322	0.372	0.020	-0.332	-0.885	-0.505	0.180	0.146	0.026
60.6	0.902	0.576	0.299	0.352	0.018	-0.335	-0.916	-0.529	0.190	0.118	0.022

144

Table 27. Continue.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
62.0	0.883	0.554	0.279	0.337	0.016	-0.338	-0.936	-0.571	0.162	0.102	0.006
63.4	0.864	0.533	0.260	0.324	0.013	-0.344	-0.959	-0.612	0.147	0.101	0.007
64.8	0.848	0.513	0.247	0.307	0.008	-0.344	-0.971	-0.618	0.147	0.095	-0.007
66.2	0.832	0.495	0.230	0.292	0.007	-0.348	-0.972	-0.619	0.131	0.092	-0.010
67.6	0.819	0.481	0.213	0.281	0.003	-0.357	-0.975	-0.619	0.128	0.090	-0.016
69.0	0.808	0.470	0.201	0.270	-0.003	-0.358	-0.986	-0.619	0.137	0.095	-0.019
70.4	0.795	0.457	0.187	0.256	0.000	-0.363	-1.005	-0.640	0.124	0.100	-0.015
71.8	0.785	0.444	0.175	0.242	0.007	-0.363	-1.030	-0.649	0.123	0.102	-0.016
73.3	0.775	0.431	0.166	0.237	0.017	-0.358	-1.047	-0.657	0.127	0.094	-0.012
74.7	0.764	0.421	0.161	0.235	0.015	-0.368	-1.068	-0.661	0.127	0.084	-0.004
76.1	0.756	0.416	0.159	0.232	0.004	-0.376	-1.095	-0.674	0.121	0.089	0.003
77.5	0.751	0.412	0.155	0.234	0.000	-0.379	-1.120	-0.684	0.144	0.088	0.013
78.9	0.749	0.413	0.155	0.231	0.006	-0.384	-1.130	-0.687	0.155	0.089	0.018
80.3	0.748	0.408	0.154	0.224	0.010	-0.382	-1.162	-0.697	0.135	0.090	0.018
81.7	0.743	0.401	0.150	0.217	0.004	-0.384	-1.191	-0.704	0.135	0.095	0.018
83.1	0.737	0.400	0.145	0.213	0.009	-0.378	-1.204	-0.704	0.138	0.103	0.021
84.5	0.738	0.404	0.144	0.216	0.008	-0.378	-1.241	-0.705	0.142	0.111	0.018
85.9	0.744	0.407	0.148	0.223	0.005	-0.380	-1.278	-0.706	0.174	0.107	0.017
87.3	0.748	0.407	0.157	0.225	0.007	-0.382	-1.291	-0.713	0.196	0.110	0.024
88.7	0.748	0.409	0.164	0.233	0.009	-0.390	-1.315	-0.727	0.217	0.117	0.032
90.1	0.749	0.415	0.169	0.233	0.008	-0.391	-1.340	-0.734	0.208	0.118	0.045
91.5	0.756	0.423	0.173	0.235	0.000	-0.390	-1.321	-0.724	0.230	0.127	0.065
92.9	0.763	0.430	0.175	0.235	-0.008	-0.392	-1.277	-0.726	0.277	0.152	0.068
94.3	0.772	0.435	0.179	0.237	-0.007	-0.392	-1.266	-0.730	0.297	0.178	0.087
95.8	0.777	0.444	0.184	0.247	0.000	-0.387	-1.237	-0.724	0.311	0.196	0.099
97.2	0.784	0.449	0.194	0.254	0.002	-0.387	-1.216	-0.720	0.314	0.212	0.109
98.6	0.789	0.453	0.205	0.263	0.009	-0.383	-1.203	-0.708	0.330	0.245	0.126
100.0	0.793	0.463	0.217	0.276	0.009	-0.376	-1.183	-0.705	0.362	0.277	0.145
101.4	0.804	0.476	0.237	0.296	0.008	-0.371	-1.162	-0.700	0.414	0.305	0.166
102.8	0.815	0.494	0.259	0.314	0.021	-0.364	-1.134	-0.689	0.442	0.335	0.185
104.2	0.834	0.517	0.283	0.334	0.024	-0.357	-1.101	-0.687	0.490	0.378	0.196
105.6	0.856	0.540	0.305	0.349	0.024	-0.357	-1.070	-0.686	0.554	0.434	0.203
107.0	0.877	0.566	0.326	0.373	0.031	-0.349	-1.029	-0.673	0.594	0.502	0.233
108.4	0.904	0.596	0.355	0.396	0.038	-0.341	-0.978	-0.659	0.642	0.548	0.273
109.8	0.931	0.629	0.387	0.419	0.040	-0.338	-0.920	-0.650	0.679	0.595	0.320
111.2	0.961	0.666	0.420	0.450	0.040	-0.333	-0.854	-0.623	0.726	0.643	0.350
112.6	0.998	0.706	0.457	0.479	0.040	-0.324	-0.787	-0.601	0.750	0.631	0.356
114.0	1.031	0.745	0.495	0.506	0.049	-0.321	-0.714	-0.579	0.748	0.596	0.347
115.4	1.067	0.789	0.529	0.529	0.059	-0.313	-0.646	-0.552	0.780	0.618	0.327
116.8	1.108	0.836	0.560	0.554	0.068	-0.305	-0.588	-0.530	0.837	0.679	0.313
118.3	1.147	0.878	0.594	0.584	0.074	-0.300	-0.549	-0.503	0.884	0.706	0.336
119.7	1.181	0.913	0.627	0.611	0.081	-0.303	-0.528	-0.469	0.842	0.685	0.371
121.1	1.211	0.946	0.653	0.635	0.082	-0.304	-0.516	-0.430	0.799	0.683	0.363
122.5	1.240	0.982	0.685	0.662	0.081	-0.301	-0.520	-0.411	0.736	0.698	0.332

Table 27. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
123.9	1.264	1.014	0.711	0.676	0.083	-0.298	-0.535	-0.411	0.672	0.654	0.316
125.3	1.287	1.036	0.722	0.681	0.089	-0.299	-0.562	-0.409	0.677	0.563	0.338
126.7	1.303	1.044	0.722	0.680	0.085	-0.298	-0.577	-0.426	0.609	0.484	0.317
128.1	1.305	1.045	0.714	0.674	0.078	-0.289	-0.563	-0.439	0.563	0.440	0.272
129.5	1.300	1.041	0.704	0.667	0.079	-0.286	-0.554	-0.436	0.578	0.405	0.216
130.9	1.289	1.021	0.689	0.656	0.079	-0.287	-0.548	-0.414	0.579	0.350	0.126
132.3	1.267	0.991	0.667	0.639	0.075	-0.282	-0.548	-0.380	0.581	0.309	0.113
133.7	1.239	0.963	0.642	0.622	0.071	-0.281	-0.552	-0.364	0.532	0.301	0.100
135.1	1.210	0.928	0.616	0.602	0.065	-0.277	-0.577	-0.352	0.469	0.268	0.081
136.5	1.177	0.890	0.585	0.579	0.060	-0.272	-0.595	-0.353	0.459	0.273	0.080
137.9	1.142	0.851	0.550	0.550	0.058	-0.269	-0.599	-0.354	0.390	0.270	0.105
139.3	1.104	0.808	0.513	0.521	0.054	-0.259	-0.614	-0.346	0.361	0.295	0.126
140.8	1.066	0.768	0.473	0.491	0.044	-0.261	-0.643	-0.350	0.406	0.291	0.117
142.2	1.032	0.726	0.439	0.470	0.042	-0.271	-0.670	-0.375	0.387	0.249	0.087
143.6	1.000	0.689	0.411	0.451	0.040	-0.273	-0.687	-0.391	0.350	0.166	0.087
145.0	0.969	0.658	0.388	0.428	0.034	-0.271	-0.722	-0.399	0.321	0.102	0.068
146.4	0.944	0.624	0.363	0.414	0.026	-0.271	-0.741	-0.422	0.255	0.109	0.023
147.8	0.918	0.604	0.342	0.392	0.022	-0.280	-0.775	-0.445	0.209	0.126	0.019
149.2	0.900	0.585	0.316	0.365	0.021	-0.287	-0.804	-0.473	0.187	0.109	0.016
150.6	0.889	0.563	0.288	0.351	0.019	-0.294	-0.830	-0.510	0.187	0.097	0.016
152.0	0.872	0.547	0.272	0.330	0.011	-0.305	-0.867	-0.558	0.201	0.096	0.015
153.4	0.856	0.526	0.253	0.312	0.007	-0.317	-0.893	-0.593	0.203	0.094	0.012
154.8	0.839	0.501	0.232	0.295	0.004	-0.323	-0.902	-0.603	0.192	0.079	0.014
156.2	0.821	0.482	0.213	0.279	-0.006	-0.330	-0.914	-0.616	0.191	0.063	0.010
157.6	0.806	0.469	0.198	0.265	-0.009	-0.336	-0.923	-0.625	0.199	0.056	0.008
159.0	0.797	0.458	0.188	0.253	-0.006	-0.336	-0.928	-0.635	0.192	0.058	0.003
160.4	0.787	0.448	0.176	0.244	-0.003	-0.337	-0.933	-0.639	0.190	0.063	0.003
161.8	0.779	0.435	0.165	0.236	0.001	-0.338	-0.944	-0.640	0.206	0.068	0.002
163.3	0.768	0.423	0.160	0.234	0.004	-0.336	-0.969	-0.654	0.211	0.062	0.010
164.7	0.754	0.413	0.155	0.228	0.008	-0.342	-0.985	-0.658	0.203	0.058	0.027
166.1	0.748	0.409	0.147	0.226	0.009	-0.343	-0.995	-0.654	0.207	0.067	0.025
167.5	0.744	0.405	0.146	0.221	0.009	-0.349	-1.005	-0.651	0.200	0.064	0.024
168.9	0.741	0.401	0.140	0.214	0.013	-0.366	-1.021	-0.651	0.197	0.060	0.027
170.3	0.738	0.395	0.137	0.214	0.009	-0.368	-1.034	-0.655	0.199	0.071	0.031
171.7	0.734	0.390	0.136	0.211	0.003	-0.368	-1.047	-0.656	0.213	0.074	0.041
173.1	0.728	0.390	0.134	0.209	-0.001	-0.365	-1.057	-0.664	0.221	0.080	0.036
174.5	0.728	0.390	0.135	0.209	-0.003	-0.362	-1.067	-0.680	0.220	0.092	0.039
175.9	0.729	0.390	0.137	0.206	0.001	-0.366	-1.096	-0.691	0.227	0.096	0.041
177.3	0.729	0.391	0.140	0.208	0.007	-0.372	-1.118	-0.707	0.229	0.112	0.044
178.7	0.731	0.393	0.143	0.214	0.003	-0.374	-1.118	-0.707	0.250	0.135	0.060
180.1	0.732	0.396	0.152	0.214	-0.004	-0.376	-1.119	-0.706	0.264	0.151	0.064
181.5	0.736	0.402	0.151	0.212	-0.004	-0.380	-1.120	-0.713	0.276	0.175	0.075
182.9	0.744	0.407	0.151	0.219	0.001	-0.378	-1.135	-0.714	0.298	0.206	0.084
184.3	0.753	0.413	0.163	0.223	0.002	-0.373	-1.113	-0.712	0.318	0.226	0.090

Table 27. Continued.
$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
185.8	0.757	0.422	0.168	0.230	0.007	-0.370	-1.114	-0.707	0.320	0.255	0.110
187.2	0.764	0.430	0.179	0.246	0.013	-0.366	-1.122	-0.711	0.334	0.272	0.124
188.6	0.771	0.437	0.197	0.262	0.017	-0.358	-1.107	-0.707	0.362	0.291	0.142
190.0	0.777	0.447	0.216	0.275	0.028	-0.353	-1.108	-0.698	0.385	0.320	0.156
191.4	0.787	0.466	0.235	0.290	0.034	-0.346	-1.107	-0.695	0.424	0.357	0.170
192.8	0.805	0.491	0.255	0.310	0.039	-0.336	-1.110	-0.687	0.465	0.397	0.189
194.2	0.829	0.510	0.278	0.325	0.044	-0.337	-1.105	-0.680	0.522	0.444	0.213
195.6	0.846	0.535	0.298	0.350	0.046	-0.342	-1.096	-0.677	0.584	0.511	0.240
197.0	0.870	0.564	0.325	0.372	0.048	-0.331	-1.092	-0.672	0.619	0.575	0.260
198.4	0.901	0.595	0.352	0.389	0.051	-0.321	-1.072	-0.663	0.672	0.618	0.299
199.8	0.929	0.624	0.375	0.410	0.051	-0.327	-1.034	-0.652	0.731	0.662	0.340
201.2	0.959	0.654	0.403	0.431	0.057	-0.332	-0.984	-0.638	0.785	0.716	0.361
202.6	0.986	0.690	0.436	0.463	0.060	-0.322	-0.941	-0.621	0.850	0.751	0.386
204.0	1.019	0.722	0.474	0.487	0.060	-0.310	-0.882	-0.597	0.884	0.728	0.396
205.4	1.048	0.760	0.501	0.501	0.071	-0.303	-0.808	-0.566	0.897	0.720	0.392
206.8	1.079	0.801	0.521	0.527	0.081	-0.303	-0.756	-0.537	0.954	0.799	0.375
208.3	1.113	0.835	0.551	0.556	0.085	-0.304	-0.719	-0.506	1.028	0.850	0.390
209.7	1.141	0.864	0.584	0.578	0.091	-0.299	-0.706	-0.468	1.018	0.839	0.427
211.1	1.163	0.892	0.610	0.598	0.092	-0.297	-0.720	-0.437	0.924	0.837	0.419
212.5	1.184	0.921	0.633	0.615	0.093	-0.298	-0.687	-0.426	0.841	0.779	0.387
213.9	1.204	0.947	0.649	0.626	0.092	-0.304	-0.631	-0.432	0.706	0.665	0.359
215.3	1.219	0.959	0.652	0.627	0.085	-0.306	-0.617	-0.420	0.586	0.565	0.343
216.7	1.229	0.960	0.648	0.625	0.085	-0.303	-0.630	-0.397	0.556	0.525	0.318
218.1	1.229	0.956	0.643	0.619	0.083	-0.303	-0.645	-0.389	0.572	0.566	0.273
219.5	1.215	0.947	0.631	0.607	0.080	-0.307	-0.645	-0.389	0.635	0.501	0.183
220.9	1.201	0.926	0.610	0.591	0.080	-0.310	-0.650	-0.396	0.638	0.339	0.096
222.3	1.179	0.897	0.586	0.574	0.073	-0.317	-0.677	-0.396	0.542	0.298	0.062
223.7	1.153	0.871	0.563	0.557	0.073	-0.316	-0.668	-0.403	0.454	0.290	0.058
225.1	1.131	0.840	0.540	0.539	0.070	-0.310	-0.647	-0.402	0.386	0.294	0.083
226.5	1.103	0.807	0.513	0.527	0.058	-0.313	-0.652	-0.386	0.337	0.336	0.133
227.9	1.070	0.773	0.488	0.508	0.056	-0.316	-0.651	-0.365	0.308	0.358	0.174
229.3	1.038	0.740	0.462	0.482	0.059	-0.312	-0.661	-0.349	0.302	0.325	0.159
230.8	1.009	0.701	0.428	0.455	0.049	-0.307	-0.680	-0.360	0.338	0.299	0.126
232.2	0.978	0.671	0.396	0.430	0.045	-0.305	-0.700	-0.370	0.396	0.290	0.106
233.6	0.955	0.646	0.368	0.409	0.044	-0.305	-0.712	-0.382	0.388	0.204	0.096
235.0	0.936	0.617	0.341	0.390	0.040	-0.310	-0.718	-0.379	0.315	0.155	0.064
236.4	0.913	0.587	0.316	0.369	0.038	-0.306	-0.749	-0.394	0.269	0.142	0.038
237.8	0.890	0.562	0.293	0.351	0.032	-0.309	-0.769	-0.425	0.233	0.149	0.044
239.2	0.871	0.540	0.271	0.332	0.025	-0.317	-0.792	-0.439	0.204	0.164	0.048
240.6	0.855	0.519	0.252	0.315	0.030	-0.323	-0.806	-0.460	0.204	0.135	0.064
242.0	0.836	0.504	0.237	0.300	0.028	-0.322	-0.820	-0.483	0.221	0.103	0.059
243.4	0.820	0.486	0.220	0.287	0.021	-0.331	-0.844	-0.504	0.217	0.087	0.044
244.8	0.806	0.467	0.203	0.272	0.021	-0.343	-0.867	-0.530	0.205	0.089	0.034
246.2	0.791	0.451	0.189	0.259	0.016	-0.345	-0.890	-0.556	0.202	0.087	0.030

Table 27. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
247.6	0.781	0.437	0.177	0.251	0.016	-0.347	-0.899	-0.575	0.187	0.085	0.026
249.0	0.771	0.429	0.167	0.237	0.014	-0.355	-0.917	-0.591	0.201	0.076	0.023
250.4	0.762	0.422	0.157	0.226	0.014	-0.356	-0.923	-0.599	0.212	0.072	0.034
251.8	0.755	0.410	0.145	0.218	0.020	-0.362	-0.930	-0.614	0.220	0.071	0.040
253.3	0.745	0.397	0.135	0.215	0.018	-0.368	-0.953	-0.627	0.200	0.065	0.040
254.7	0.737	0.387	0.132	0.212	0.017	-0.367	-0.962	-0.639	0.176	0.053	0.044
256.1	0.728	0.383	0.129	0.211	0.013	-0.369	-0.973	-0.646	0.184	0.032	0.044
257.5	0.725	0.383	0.129	0.206	0.012	-0.373	-0.965	-0.632	0.180	0.034	0.045
258.9	0.725	0.382	0.128	0.200	0.011	-0.374	-0.969	-0.624	0.185	0.043	0.049
260.3	0.725	0.381	0.121	0.196	0.008	-0.374	-0.971	-0.622	0.205	0.042	0.046
261.7	0.725	0.378	0.116	0.191	0.005	-0.375	-0.994	-0.628	0.226	0.041	0.053
263.1	0.724	0.378	0.116	0.190	0.000	-0.378	-1.020	-0.643	0.236	0.039	0.046
264.5	0.724	0.377	0.115	0.186	-0.001	-0.375	-1.029	-0.662	0.243	0.051	0.046
265.9	0.724	0.376	0.112	0.187	0.001	-0.372	-1.059	-0.673	0.259	0.077	0.045
267.3	0.723	0.374	0.118	0.193	-0.004	-0.373	-1.047	-0.671	0.266	0.074	0.040
268.7	0.719	0.373	0.128	0.199	-0.009	-0.375	-1.059	-0.673	0.261	0.078	0.051
270.1	0.719	0.376	0.134	0.202	-0.014	-0.375	-1.079	-0.683	0.279	0.081	0.053
271.5	0.725	0.384	0.138	0.200	-0.017	-0.366	-1.071	-0.687	0.300	0.091	0.064
272.9	0.734	0.394	0.139	0.200	-0.016	-0.360	-1.076	-0.685	0.305	0.118	0.075
274.3	0.746	0.403	0.143	0.208	-0.010	-0.349	-1.093	-0.686	0.348	0.136	0.095
275.8	0.753	0.412	0.154	0.218	-0.001	-0.345	-1.098	-0.688	0.372	0.168	0.116
277.2	0.758	0.418	0.163	0.233	0.004	-0.338	-1.091	-0.681	0.390	0.197	0.127
278.6	0.765	0.424	0.180	0.250	0.005	-0.329	-1.093	-0.673	0.408	0.228	0.139
280.0	0.771	0.433	0.202	0.268	0.008	-0.319	-1.096	-0.664	0.431	0.260	0.151
281.4	0.782	0.450	0.227	0.290	0.017	-0.310	-1.080	-0.661	0.480	0.305	0.167
282.8	0.801	0.480	0.255	0.313	0.023	-0.308	-1.082	-0.654	0.503	0.334	0.187
284.2	0.826	0.510	0.283	0.331	0.028	-0.308	-1.075	-0.649	0.527	0.370	0.212
285.6	0.857	0.542	0.306	0.352	0.028	-0.307	-1.063	-0.648	0.568	0.424	0.241
287.0	0.885	0.575	0.329	0.373	0.032	-0.302	-1.068	-0.646	0.609	0.484	0.259
288.4	0.915	0.609	0.360	0.400	0.038	-0.306	-1.049	-0.639	0.666	0.532	0.294
289.8	0.949	0.645	0.394	0.430	0.039	-0.309	-1.008	-0.624	0.725	0.566	0.322
291.2	0.983	0.679	0.427	0.454	0.042	-0.307	-0.976	-0.610	0.784	0.603	0.345
292.6	1.017	0.720	0.462	0.486	0.044	-0.304	-0.931	-0.602	0.813	0.629	0.356
294.0	1.054	0.757	0.501	0.511	0.049	-0.296	-0.878	-0.581	0.828	0.633	0.354
295.4	1.086	0.799	0.532	0.532	0.059	-0.291	-0.828	-0.554	0.823	0.631	0.343
296.8	1.121	0.843	0.561	0.559	0.068	-0.284	-0.768	-0.536	0.807	0.656	0.345
298.3	1.157	0.881	0.592	0.585	0.079	-0.277	-0.712	-0.503	0.847	0.698	0.354
299.7	1.190	0.913	0.620	0.610	0.088	-0.280	-0.688	-0.464	0.865	0.714	0.356
301.1	1.216	0.946	0.651	0.638	0.090	-0.277	-0.679	-0.430	0.855	0.713	0.360
302.5	1.237	0.977	0.679	0.658	0.091	-0.278	-0.659	-0.405	0.806	0.716	0.364
303.9	1.256	0.998	0.693	0.665	0.090	-0.278	-0.644	-0.400	0.699	0.673	0.366
305.3	1.270	1.010	0.698	0.670	0.089	-0.275	-0.636	-0.390	0.597	0.640	0.366
306.7	1.278	1.014	0.698	0.669	0.088	-0.273	-0.647	-0.385	0.554	0.626	0.331
308.1	1.278	1.009	0.693	0.663	0.086	-0.276	-0.662	-0.385	0.525	0.585	0.301

Table 27. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D5	D6	D8	D9	D17	D18	D22	D26	D14	D15	D16
309.5	1.270	1.001	0.681	0.651	0.082	-0.278	-0.656	-0.387	0.520	0.482	0.294
310.9	1.256	0.986	0.663	0.636	0.082	-0.277	-0.633	-0.394	0.526	0.354	0.185
312.3	1.239	0.962	0.641	0.623	0.075	-0.282	-0.613	-0.381	0.490	0.294	0.092
313.7	1.216	0.931	0.617	0.606	0.074	-0.284	-0.611	-0.353	0.438	0.241	0.044
315.1	1.190	0.901	0.594	0.586	0.073	-0.284	-0.628	-0.326	0.380	0.258	0.029
316.5	1.160	0.867	0.566	0.566	0.062	-0.284	-0.646	-0.320	0.336	0.307	0.043
317.9	1.126	0.833	0.535	0.544	0.054	-0.285	-0.656	-0.327	0.305	0.319	0.016
319.3	1.094	0.797	0.504	0.519	0.052	-0.280	-0.678	-0.326	0.295	0.309	0.059
320.8	1.061	0.758	0.473	0.491	0.047	-0.273	-0.698	-0.345	0.334	0.300	0.113
322.2	1.031	0.724	0.440	0.463	0.040	-0.268	-0.710	-0.372	0.347	0.258	0.072
323.6	1.004	0.691	0.405	0.441	0.040	-0.274	-0.740	-0.394	0.281	0.226	0.073
325.0	0.977	0.661	0.378	0.419	0.034	-0.275	-0.774	-0.420	0.243	0.224	0.070
326.4	0.952	0.632	0.352	0.396	0.028	-0.281	-0.794	-0.444	0.190	0.188	0.050
327.8	0.929	0.604	0.327	0.377	0.030	-0.287	-0.806	-0.470	0.154	0.168	0.047
329.2	0.907	0.580	0.306	0.360	0.028	-0.285	-0.835	-0.501	0.131	0.158	0.032
330.6	0.891	0.560	0.286	0.344	0.023	-0.289	-0.847	-0.535	0.132	0.150	0.030
332.0	0.874	0.543	0.270	0.328	0.021	-0.298	-0.859	-0.556	0.139	0.137	0.020
333.4	0.858	0.525	0.252	0.315	0.022	-0.308	-0.878	-0.566	0.112	0.124	0.012
334.8	0.841	0.505	0.235	0.301	0.021	-0.316	-0.893	-0.572	0.126	0.113	-0.001
336.2	0.825	0.487	0.221	0.286	0.014	-0.322	-0.895	-0.562	0.131	0.106	-0.005
337.6	0.813	0.471	0.207	0.274	0.007	-0.325	-0.907	-0.562	0.138	0.099	0.008
339.0	0.805	0.465	0.196	0.263	0.001	-0.337	-0.929	-0.577	0.153	0.100	0.005
340.4	0.798	0.459	0.186	0.256	-0.002	-0.341	-0.943	-0.579	0.158	0.105	-0.004
341.8	0.790	0.449	0.177	0.246	0.002	-0.337	-0.961	-0.575	0.151	0.101	-0.002
343.3	0.781	0.436	0.167	0.236	0.001	-0.343	-0.990	-0.578	0.149	0.094	0.001
344.7	0.771	0.423	0.157	0.234	-0.002	-0.351	-1.011	-0.587	0.169	0.091	0.004
346.1	0.761	0.419	0.156	0.231	-0.004	-0.348	-1.023	-0.598	0.170	0.088	0.003
347.5	0.757	0.419	0.154	0.223	0.000	-0.347	-1.046	-0.602	0.201	0.094	0.011
348.9	0.755	0.416	0.149	0.220	0.002	-0.346	-1.048	-0.614	0.210	0.089	0.013
350.3	0.753	0.411	0.148	0.222	0.007	-0.348	-1.056	-0.626	0.204	0.078	0.011
351.7	0.750	0.407	0.148	0.226	0.006	-0.347	-1.071	-0.648	0.222	0.076	0.014
353.1	0.749	0.406	0.152	0.230	0.000	-0.345	-1.053	-0.658	0.208	0.082	0.023
354.5	0.750	0.410	0.158	0.235	0.004	-0.346	-1.052	-0.658	0.229	0.088	0.034
355.9	0.755	0.415	0.166	0.237	0.006	-0.342	-1.060	-0.670	0.221	0.093	0.046
357.3	0.759	0.419	0.170	0.237	0.003	-0.335	-1.055	-0.681	0.235	0.106	0.059
358.7	0.759	0.422	0.174	0.241	0.003	-0.331	-1.040	-0.683	0.244	0.118	0.062

Table 28. Modified unsteady pressure coefficients around the body at $x/l = 0.90$. $C_T/\sigma = 0.0820$, $\mu = 0.232$, $\alpha_s = -3.0°$, $\theta = 11.9°$, $A_1 = -1.3°$, $B_1 = 4.0°$.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
0.1	0.074	-0.241	-0.362	-0.600	-0.827	-1.037	-1.028	-0.634	-0.400	0.228
1.5	0.074	-0.238	-0.363	-0.599	-0.824	-1.032	-1.015	-0.646	-0.410	0.228
2.9	0.072	-0.246	-0.369	-0.593	-0.826	-1.024	-1.002	-0.654	-0.407	0.229
4.3	0.074	-0.239	-0.363	-0.590	-0.815	-1.008	-0.985	-0.638	-0.406	0.229
5.8	0.074	-0.228	-0.355	-0.585	-0.806	-0.987	-0.977	-0.641	-0.408	0.227
7.2	0.066	-0.229	-0.347	-0.582	-0.798	-0.984	-0.965	-0.650	-0.398	0.227
8.6	0.063	-0.228	-0.347	-0.587	-0.790	-0.977	-0.953	-0.637	-0.400	0.226
10.0	0.068	-0.227	-0.359	-0.586	-0.789	-0.969	-0.942	-0.636	-0.404	0.227
11.4	0.069	-0.223	-0.350	-0.579	-0.790	-0.971	-0.934	-0.627	-0.412	0.228
12.8	0.082	-0.217	-0.348	-0.587	-0.788	-0.966	-0.927	-0.630	-0.419	0.229
14.2	0.083	-0.227	-0.357	-0.598	-0.788	-0.955	-0.916	-0.649	-0.412	0.228
15.6	0.084	-0.227	-0.351	-0.593	-0.790	-0.948	-0.907	-0.633	-0.414	0.226
17.0	0.083	-0.236	-0.355	-0.596	-0.783	-0.939	-0.899	-0.630	-0.410	0.225
18.4	0.073	-0.230	-0.363	-0.597	-0.772	-0.924	-0.888	-0.612	-0.396	0.224
19.8	0.085	-0.225	-0.368	-0.597	-0.756	-0.895	-0.866	-0.611	-0.403	0.223
21.2	0.090	-0.230	-0.350	-0.589	-0.725	-0.858	-0.835	-0.615	-0.391	0.224
22.6	0.088	-0.221	-0.336	-0.569	-0.695	-0.802	-0.789	-0.594	-0.382	0.224
24.0	0.088	-0.213	-0.330	-0.555	-0.649	-0.745	-0.736	-0.572	-0.378	0.226
25.4	0.090	-0.213	-0.306	-0.529	-0.619	-0.709	-0.686	-0.557	-0.367	0.227
26.8	0.085	-0.194	-0.279	-0.513	-0.617	-0.694	-0.652	-0.530	-0.357	0.227
28.3	0.079	-0.176	-0.277	-0.518	-0.626	-0.690	-0.639	-0.502	-0.331	0.227
29.7	0.086	-0.179	-0.300	-0.526	-0.631	-0.689	-0.630	-0.470	-0.301	0.227
31.1	0.084	-0.188	-0.308	-0.536	-0.636	-0.677	-0.614	-0.462	-0.285	0.229
32.5	0.089	-0.203	-0.309	-0.541	-0.625	-0.655	-0.591	-0.459	-0.273	0.231
33.9	0.090	-0.212	-0.324	-0.539	-0.620	-0.641	-0.568	-0.449	-0.273	0.232
35.3	0.087	-0.219	-0.322	-0.549	-0.632	-0.654	-0.563	-0.438	-0.276	0.233
36.7	0.088	-0.227	-0.337	-0.556	-0.639	-0.663	-0.569	-0.422	-0.258	0.234
38.1	0.084	-0.237	-0.349	-0.570	-0.647	-0.671	-0.573	-0.412	-0.240	0.235
39.5	0.085	-0.255	-0.363	-0.582	-0.646	-0.672	-0.570	-0.408	-0.243	0.235
40.9	0.072	-0.266	-0.375	-0.582	-0.649	-0.673	-0.565	-0.407	-0.250	0.236
42.3	0.072	-0.250	-0.375	-0.586	-0.664	-0.694	-0.580	-0.392	-0.251	0.236
43.7	0.074	-0.262	-0.382	-0.591	-0.668	-0.705	-0.596	-0.387	-0.228	0.238
45.1	0.065	-0.275	-0.388	-0.603	-0.661	-0.697	-0.592	-0.405	-0.226	0.239
46.5	0.058	-0.271	-0.389	-0.601	-0.654	-0.709	-0.604	-0.391	-0.233	0.238
47.9	0.054	-0.265	-0.372	-0.577	-0.665	-0.728	-0.631	-0.365	-0.217	0.238
49.3	0.055	-0.251	-0.360	-0.578	-0.669	-0.734	-0.653	-0.359	-0.191	0.237
50.8	0.059	-0.257	-0.363	-0.575	-0.664	-0.752	-0.681	-0.361	-0.192	0.237
52.2	0.052	-0.248	-0.353	-0.567	-0.679	-0.776	-0.720	-0.350	-0.192	0.235
53.6	0.053	-0.248	-0.361	-0.578	-0.695	-0.807	-0.763	-0.372	-0.183	0.233
55.0	0.066	-0.257	-0.376	-0.588	-0.720	-0.839	-0.805	-0.426	-0.219	0.234
56.4	0.068	-0.259	-0.385	-0.596	-0.744	-0.862	-0.833	-0.465	-0.249	0.235
57.8	0.059	-0.263	-0.390	-0.612	-0.749	-0.866	-0.856	-0.477	-0.281	0.235
59.2	0.054	-0.270	-0.398	-0.603	-0.747	-0.885	-0.884	-0.459	-0.283	0.235
60.6	0.059	-0.261	-0.390	-0.604	-0.763	-0.916	-0.919	-0.495	-0.276	0.234

Table 28. Continued.

$$C_p \times 100 \text{ for orifice:}$$

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
62.0	0.065	-0.252	-0.386	-0.608	-0.769	-0.936	-0.949	-0.541	-0.311	0.233
63.4	0.064	-0.252	-0.393	-0.613	-0.780	-0.959	-0.971	-0.574	-0.346	0.232
64.8	0.065	-0.258	-0.398	-0.624	-0.799	-0.971	-0.982	-0.594	-0.381	0.232
66.2	0.068	-0.264	-0.397	-0.621	-0.802	-0.972	-0.989	-0.580	-0.392	0.231
67.6	0.069	-0.264	-0.400	-0.624	-0.798	-0.975	-0.996	-0.571	-0.369	0.229
69.0	0.065	-0.255	-0.398	-0.619	-0.802	-0.986	-1.010	-0.572	-0.360	0.227
70.4	0.054	-0.251	-0.379	-0.604	-0.804	-1.005	-1.029	-0.596	-0.363	0.224
71.8	0.052	-0.245	-0.373	-0.600	-0.813	-1.030	-1.044	-0.610	-0.364	0.221
73.3	0.050	-0.232	-0.362	-0.594	-0.817	-1.047	-1.058	-0.606	-0.375	0.220
74.7	0.050	-0.230	-0.365	-0.592	-0.828	-1.068	-1.079	-0.608	-0.385	0.221
76.1	0.044	-0.223	-0.360	-0.580	-0.837	-1.095	-1.100	-0.627	-0.389	0.222
77.5	0.044	-0.212	-0.351	-0.569	-0.854	-1.120	-1.106	-0.638	-0.407	0.223
78.9	0.050	-0.206	-0.337	-0.569	-0.858	-1.130	-1.109	-0.645	-0.407	0.222
80.3	0.049	-0.200	-0.336	-0.560	-0.863	-1.162	-1.127	-0.648	-0.414	0.222
81.7	0.057	-0.196	-0.337	-0.559	-0.877	-1.191	-1.135	-0.657	-0.423	0.222
83.1	0.065	-0.194	-0.323	-0.554	-0.874	-1.204	-1.139	-0.662	-0.420	0.223
84.5	0.064	-0.200	-0.314	-0.551	-0.899	-1.241	-1.156	-0.662	-0.430	0.222
85.9	0.063	-0.198	-0.320	-0.559	-0.943	-1.278	-1.156	-0.675	-0.436	0.222
87.3	0.057	-0.203	-0.341	-0.567	-0.957	-1.291	-1.158	-0.670	-0.420	0.222
88.7	0.059	-0.220	-0.352	-0.589	-0.966	-1.315	-1.168	-0.682	-0.432	0.221
90.1	0.071	-0.230	-0.350	-0.602	-0.985	-1.340	-1.170	-0.693	-0.449	0.221
91.5	0.071	-0.235	-0.360	-0.604	-0.989	-1.321	-1.167	-0.681	-0.449	0.222
92.9	0.069	-0.242	-0.372	-0.615	-0.985	-1.277	-1.158	-0.685	-0.463	0.222
94.3	0.064	-0.233	-0.371	-0.614	-0.976	-1.266	-1.148	-0.682	-0.452	0.222
95.8	0.076	-0.242	-0.380	-0.614	-0.961	-1.237	-1.138	-0.678	-0.447	0.222
97.2	0.071	-0.243	-0.371	-0.612	-0.930	-1.216	-1.123	-0.681	-0.445	0.220
98.6	0.057	-0.229	-0.362	-0.604	-0.918	-1.203	-1.103	-0.676	-0.439	0.220
100.0	0.061	-0.225	-0.363	-0.592	-0.907	-1.183	-1.078	-0.672	-0.440	0.220
101.4	0.064	-0.229	-0.355	-0.589	-0.888	-1.162	-1.059	-0.665	-0.433	0.220
102.8	0.074	-0.224	-0.355	-0.594	-0.877	-1.134	-1.040	-0.660	-0.439	0.219
104.2	0.071	-0.222	-0.348	-0.588	-0.864	-1.101	-1.013	-0.658	-0.442	0.219
105.6	0.065	-0.218	-0.346	-0.593	-0.860	-1.070	-0.992	-0.658	-0.424	0.219
107.0	0.071	-0.220	-0.354	-0.597	-0.835	-1.029	-0.963	-0.642	-0.424	0.219
108.4	0.068	-0.216	-0.349	-0.596	-0.811	-0.978	-0.932	-0.629	-0.411	0.219
109.8	0.074	-0.217	-0.347	-0.585	-0.789	-0.920	-0.895	-0.623	-0.402	0.217
111.2	0.076	-0.214	-0.351	-0.580	-0.740	-0.854	-0.844	-0.609	-0.395	0.218
112.6	0.074	-0.219	-0.341	-0.567	-0.695	-0.787	-0.785	-0.591	-0.390	0.219
114.0	0.084	-0.222	-0.336	-0.557	-0.659	-0.714	-0.727	-0.574	-0.396	0.220
115.4	0.085	-0.210	-0.322	-0.545	-0.615	-0.646	-0.667	-0.548	-0.363	0.221
116.8	0.079	-0.203	-0.305	-0.529	-0.575	-0.588	-0.609	-0.529	-0.340	0.221
118.3	0.085	-0.196	-0.296	-0.508	-0.542	-0.549	-0.557	-0.504	-0.328	0.224
119.7	0.081	-0.187	-0.283	-0.504	-0.540	-0.528	-0.521	-0.476	-0.305	0.225
121.1	0.080	-0.188	-0.303	-0.511	-0.538	-0.516	-0.500	-0.439	-0.278	0.226
122.5	0.079	-0.198	-0.305	-0.519	-0.529	-0.520	-0.493	-0.427	-0.262	0.228

Table 28. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
123.9	0.080	-0.213	-0.297	-0.529	-0.556	-0.535	-0.493	-0.426	-0.264	0.229
125.3	0.082	-0.223	-0.327	-0.544	-0.575	-0.562	-0.516	-0.420	-0.249	0.230
126.7	0.073	-0.234	-0.362	-0.578	-0.585	-0.577	-0.538	-0.435	-0.252	0.230
128.1	0.074	-0.263	-0.378	-0.597	-0.581	-0.563	-0.528	-0.454	-0.261	0.230
129.5	0.077	-0.266	-0.372	-0.584	-0.570	-0.554	-0.513	-0.442	-0.273	0.232
130.9	0.073	-0.264	-0.365	-0.575	-0.574	-0.548	-0.496	-0.420	-0.267	0.232
132.3	0.070	-0.257	-0.360	-0.570	-0.569	-0.548	-0.489	-0.389	-0.242	0.234
133.7	0.057	-0.247	-0.355	-0.569	-0.555	-0.552	-0.497	-0.371	-0.220	0.234
135.1	0.052	-0.256	-0.348	-0.565	-0.558	-0.577	-0.522	-0.353	-0.206	0.234
136.5	0.051	-0.256	-0.344	-0.557	-0.577	-0.595	-0.540	-0.356	-0.193	0.234
137.9	0.057	-0.246	-0.341	-0.550	-0.584	-0.599	-0.541	-0.365	-0.202	0.234
139.3	0.062	-0.245	-0.343	-0.551	-0.591	-0.614	-0.569	-0.348	-0.196	0.234
140.8	0.056	-0.237	-0.345	-0.562	-0.602	-0.643	-0.612	-0.344	-0.180	0.233
142.2	0.065	-0.234	-0.354	-0.564	-0.613	-0.670	-0.640	-0.368	-0.185	0.233
143.6	0.065	-0.237	-0.360	-0.575	-0.625	-0.687	-0.671	-0.380	-0.210	0.234
145.0	0.071	-0.242	-0.367	-0.578	-0.643	-0.722	-0.710	-0.385	-0.211	0.234
146.4	0.069	-0.248	-0.372	-0.580	-0.652	-0.741	-0.746	-0.396	-0.212	0.235
147.8	0.065	-0.244	-0.361	-0.582	-0.661	-0.775	-0.785	-0.415	-0.219	0.237
149.2	0.072	-0.234	-0.364	-0.574	-0.676	-0.804	-0.824	-0.451	-0.235	0.235
150.6	0.073	-0.233	-0.362	-0.582	-0.684	-0.830	-0.868	-0.482	-0.259	0.235
152.0	0.081	-0.230	-0.372	-0.581	-0.699	-0.867	-0.910	-0.529	-0.302	0.235
153.4	0.080	-0.240	-0.371	-0.582	-0.720	-0.893	-0.934	-0.561	-0.337	0.236
154.8	0.074	-0.243	-0.372	-0.595	-0.729	-0.902	-0.952	-0.571	-0.344	0.237
156.2	0.077	-0.244	-0.369	-0.588	-0.733	-0.914	-0.978	-0.581	-0.363	0.235
157.6	0.076	-0.243	-0.358	-0.591	-0.736	-0.923	-0.992	-0.594	-0.368	0.233
159.0	0.079	-0.242	-0.355	-0.591	-0.747	-0.928	-0.996	-0.594	-0.378	0.230
160.4	0.077	-0.238	-0.356	-0.578	-0.740	-0.933	-1.004	-0.592	-0.368	0.227
161.8	0.073	-0.235	-0.358	-0.576	-0.742	-0.944	-1.015	-0.585	-0.368	0.225
163.3	0.066	-0.227	-0.337	-0.568	-0.757	-0.969	-1.029	-0.610	-0.382	0.223
164.7	0.058	-0.212	-0.335	-0.552	-0.767	-0.985	-1.036	-0.614	-0.368	0.224
166.1	0.059	-0.198	-0.328	-0.542	-0.775	-0.995	-1.039	-0.614	-0.373	0.225
167.5	0.054	-0.195	-0.316	-0.540	-0.772	-1.005	-1.041	-0.605	-0.377	0.226
168.9	0.055	-0.187	-0.307	-0.539	-0.780	-1.021	-1.050	-0.603	-0.371	0.226
170.3	0.061	-0.194	-0.311	-0.535	-0.784	-1.034	-1.054	-0.624	-0.371	0.226
171.7	0.074	-0.195	-0.309	-0.530	-0.800	-1.047	-1.050	-0.613	-0.363	0.225
173.1	0.073	-0.180	-0.295	-0.531	-0.810	-1.057	-1.063	-0.625	-0.377	0.224
174.5	0.072	-0.178	-0.298	-0.525	-0.807	-1.067	-1.077	-0.638	-0.392	0.224
175.9	0.075	-0.177	-0.297	-0.528	-0.818	-1.096	-1.083	-0.654	-0.403	0.224
177.3	0.073	-0.185	-0.302	-0.539	-0.856	-1.118	-1.090	-0.669	-0.423	0.224
178.7	0.078	-0.185	-0.315	-0.547	-0.850	-1.118	-1.088	-0.667	-0.431	0.224
180.1	0.073	-0.191	-0.326	-0.561	-0.854	-1.119	-1.093	-0.666	-0.421	0.224
181.5	0.078	-0.204	-0.338	-0.574	-0.866	-1.120	-1.100	-0.680	-0.426	0.223
182.9	0.082	-0.218	-0.335	-0.578	-0.877	-1.135	-1.105	-0.679	-0.441	0.222
184.3	0.078	-0.227	-0.336	-0.586	-0.870	-1.113	-1.104	-0.680	-0.439	0.221

Table 28. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
185.8	0.080	-0.220	-0.343	-0.590	-0.867	-1.114	-1.103	-0.674	-0.433	0.220
187.2	0.082	-0.221	-0.344	-0.580	-0.859	-1.122	-1.104	-0.672	-0.443	0.219
188.6	0.079	-0.219	-0.343	-0.587	-0.853	-1.107	-1.096	-0.674	-0.436	0.220
190.0	0.068	-0.206	-0.341	-0.580	-0.852	-1.108	-1.090	-0.670	-0.433	0.219
191.4	0.069	-0.209	-0.330	-0.576	-0.854	-1.107	-1.080	-0.663	-0.431	0.219
192.8	0.079	-0.208	-0.327	-0.580	-0.849	-1.110	-1.069	-0.656	-0.414	0.220
194.2	0.079	-0.210	-0.340	-0.591	-0.857	-1.105	-1.060	-0.643	-0.421	0.222
195.6	0.079	-0.218	-0.338	-0.597	-0.855	-1.096	-1.044	-0.644	-0.415	0.222
197.0	0.082	-0.205	-0.343	-0.600	-0.848	-1.092	-1.028	-0.641	-0.410	0.220
198.4	0.084	-0.208	-0.351	-0.600	-0.848	-1.072	-1.016	-0.632	-0.412	0.220
199.8	0.085	-0.219	-0.356	-0.595	-0.834	-1.034	-0.990	-0.627	-0.400	0.221
201.2	0.085	-0.223	-0.348	-0.595	-0.809	-0.984	-0.952	-0.610	-0.388	0.222
202.6	0.090	-0.225	-0.344	-0.592	-0.790	-0.941	-0.909	-0.601	-0.387	0.223
204.0	0.093	-0.224	-0.330	-0.585	-0.752	-0.882	-0.854	-0.585	-0.385	0.223
205.4	0.093	-0.221	-0.325	-0.562	-0.716	-0.808	-0.790	-0.557	-0.370	0.224
206.8	0.089	-0.203	-0.311	-0.538	-0.681	-0.756	-0.726	-0.537	-0.346	0.224
208.3	0.086	-0.183	-0.288	-0.519	-0.655	-0.719	-0.682	-0.495	-0.321	0.226
209.7	0.085	-0.182	-0.288	-0.519	-0.671	-0.706	-0.646	-0.464	-0.301	0.227
211.1	0.085	-0.192	-0.308	-0.539	-0.694	-0.720	-0.644	-0.434	-0.268	0.228
212.5	0.090	-0.217	-0.336	-0.564	-0.683	-0.687	-0.625	-0.424	-0.235	0.228
213.9	0.095	-0.235	-0.339	-0.575	-0.658	-0.631	-0.571	-0.447	-0.246	0.229
215.3	0.090	-0.234	-0.342	-0.571	-0.659	-0.617	-0.545	-0.440	-0.260	0.229
216.7	0.076	-0.238	-0.352	-0.580	-0.665	-0.630	-0.548	-0.406	-0.250	0.231
218.1	0.066	-0.247	-0.364	-0.595	-0.678	-0.645	-0.560	-0.387	-0.215	0.234
219.5	0.074	-0.270	-0.394	-0.614	-0.685	-0.645	-0.559	-0.394	-0.207	0.234
220.9	0.070	-0.282	-0.401	-0.620	-0.686	-0.650	-0.562	-0.406	-0.228	0.234
222.3	0.070	-0.281	-0.405	-0.618	-0.699	-0.677	-0.588	-0.403	-0.239	0.235
223.7	0.072	-0.294	-0.426	-0.629	-0.693	-0.668	-0.592	-0.421	-0.243	0.235
225.1	0.063	-0.303	-0.422	-0.631	-0.682	-0.647	-0.580	-0.418	-0.255	0.236
226.5	0.060	-0.292	-0.402	-0.622	-0.671	-0.652	-0.575	-0.390	-0.245	0.236
227.9	0.052	-0.286	-0.397	-0.622	-0.660	-0.651	-0.573	-0.374	-0.227	0.234
229.3	0.049	-0.279	-0.400	-0.618	-0.666	-0.661	-0.594	-0.358	-0.207	0.233
230.8	0.049	-0.266	-0.395	-0.611	-0.672	-0.680	-0.614	-0.372	-0.200	0.232
232.2	0.052	-0.266	-0.395	-0.615	-0.679	-0.700	-0.641	-0.378	-0.205	0.232
233.6	0.059	-0.272	-0.401	-0.619	-0.688	-0.712	-0.663	-0.382	-0.209	0.232
235.0	0.062	-0.270	-0.396	-0.613	-0.691	-0.718	-0.679	-0.375	-0.210	0.233
236.4	0.063	-0.272	-0.401	-0.616	-0.696	-0.749	-0.717	-0.385	-0.216	0.233
237.8	0.055	-0.281	-0.409	-0.629	-0.697	-0.769	-0.741	-0.413	-0.227	0.232
239.2	0.056	-0.280	-0.390	-0.621	-0.706	-0.792	-0.768	-0.419	-0.221	0.231
240.6	0.059	-0.262	-0.380	-0.616	-0.713	-0.806	-0.791	-0.445	-0.234	0.231
242.0	0.059	-0.258	-0.387	-0.613	-0.712	-0.820	-0.817	-0.461	-0.254	0.232
243.4	0.058	-0.265	-0.400	-0.623	-0.721	-0.844	-0.836	-0.480	-0.263	0.232
244.8	0.057	-0.272	-0.407	-0.626	-0.739	-0.867	-0.861	-0.505	-0.294	0.234
246.2	0.058	-0.275	-0.409	-0.622	-0.751	-0.890	-0.892	-0.529	-0.309	0.235

Table 28. Continued.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
247.6	0.064	-0.266	-0.399	-0.625	-0.760	-0.899	-0.904	-0.551	-0.338	0.234
249.0	0.072	-0.271	-0.403	-0.630	-0.769	-0.917	-0.924	-0.557	-0.355	0.233
250.4	0.074	-0.277	-0.409	-0.628	-0.771	-0.923	-0.930	-0.577	-0.348	0.231
251.8	0.067	-0.275	-0.399	-0.622	-0.776	-0.930	-0.943	-0.582	-0.360	0.228
253.3	0.063	-0.264	-0.388	-0.616	-0.782	-0.953	-0.950	-0.593	-0.363	0.226
254.7	0.059	-0.249	-0.379	-0.612	-0.791	-0.962	-0.961	-0.597	-0.368	0.225
256.1	0.056	-0.239	-0.376	-0.604	-0.789	-0.973	-0.970	-0.613	-0.378	0.226
257.5	0.052	-0.232	-0.374	-0.597	-0.807	-0.965	-0.958	-0.603	-0.383	0.226
258.9	0.049	-0.230	-0.370	-0.595	-0.796	-0.969	-0.964	-0.581	-0.360	0.225
260.3	0.057	-0.230	-0.367	-0.586	-0.787	-0.971	-0.964	-0.589	-0.357	0.224
261.7	0.064	-0.231	-0.366	-0.578	-0.790	-0.994	-0.962	-0.595	-0.350	0.224
263.1	0.076	-0.226	-0.350	-0.574	-0.809	-1.020	-0.976	-0.615	-0.377	0.224
264.5	0.070	-0.224	-0.346	-0.569	-0.829	-1.029	-0.986	-0.638	-0.400	0.223
265.9	0.057	-0.217	-0.333	-0.574	-0.825	-1.059	-0.992	-0.643	-0.405	0.222
267.3	0.068	-0.213	-0.343	-0.583	-0.840	-1.047	-0.999	-0.646	-0.406	0.222
268.7	0.068	-0.218	-0.357	-0.594	-0.849	-1.059	-1.001	-0.642	-0.401	0.222
270.1	0.060	-0.229	-0.357	-0.597	-0.849	-1.079	-1.003	-0.646	-0.410	0.222
271.5	0.063	-0.240	-0.357	-0.600	-0.869	-1.071	-1.007	-0.662	-0.424	0.221
272.9	0.072	-0.234	-0.360	-0.606	-0.877	-1.076	-1.015	-0.669	-0.439	0.221
274.3	0.071	-0.235	-0.369	-0.606	-0.878	-1.093	-1.012	-0.664	-0.433	0.222
275.8	0.064	-0.232	-0.367	-0.617	-0.886	-1.098	-1.015	-0.663	-0.438	0.222
277.2	0.067	-0.237	-0.369	-0.617	-0.876	-1.091	-1.016	-0.658	-0.424	0.221
278.6	0.071	-0.242	-0.371	-0.618	-0.882	-1.093	-1.013	-0.646	-0.411	0.219
280.0	0.068	-0.237	-0.362	-0.612	-0.890	-1.096	-1.007	-0.636	-0.415	0.218
281.4	0.070	-0.234	-0.355	-0.607	-0.885	-1.080	-0.998	-0.633	-0.407	0.220
282.8	0.074	-0.234	-0.364	-0.606	-0.876	-1.082	-0.992	-0.630	-0.402	0.221
284.2	0.080	-0.230	-0.361	-0.610	-0.875	-1.075	-0.976	-0.618	-0.405	0.221
285.6	0.080	-0.233	-0.355	-0.603	-0.870	-1.063	-0.970	-0.623	-0.396	0.222
287.0	0.070	-0.235	-0.364	-0.605	-0.867	-1.068	-0.963	-0.622	-0.396	0.221
288.4	0.072	-0.227	-0.360	-0.606	-0.860	-1.049	-0.949	-0.609	-0.400	0.222
289.8	0.075	-0.233	-0.354	-0.606	-0.846	-1.008	-0.925	-0.607	-0.391	0.222
291.2	0.072	-0.229	-0.345	-0.606	-0.829	-0.976	-0.891	-0.594	-0.383	0.222
292.6	0.078	-0.220	-0.349	-0.594	-0.805	-0.931	-0.852	-0.580	-0.379	0.224
294.0	0.085	-0.231	-0.353	-0.588	-0.778	-0.878	-0.807	-0.569	-0.363	0.223
295.4	0.092	-0.230	-0.337	-0.571	-0.749	-0.828	-0.760	-0.544	-0.356	0.223
296.8	0.088	-0.228	-0.333	-0.564	-0.723	-0.768	-0.708	-0.528	-0.340	0.224
298.3	0.081	-0.219	-0.329	-0.561	-0.694	-0.712	-0.652	-0.499	-0.318	0.224
299.7	0.082	-0.205	-0.323	-0.555	-0.685	-0.688	-0.615	-0.459	-0.296	0.226
301.1	0.084	-0.228	-0.328	-0.569	-0.697	-0.679	-0.596	-0.421	-0.262	0.228
302.5	0.085	-0.233	-0.338	-0.577	-0.696	-0.659	-0.575	-0.410	-0.233	0.229
303.9	0.083	-0.233	-0.342	-0.582	-0.690	-0.644	-0.559	-0.402	-0.224	0.230
305.3	0.067	-0.242	-0.358	-0.594	-0.680	-0.636	-0.544	-0.397	-0.226	0.231
306.7	0.064	-0.250	-0.356	-0.592	-0.683	-0.647	-0.550	-0.394	-0.216	0.233
308.1	0.071	-0.259	-0.357	-0.603	-0.709	-0.662	-0.574	-0.381	-0.205	0.235

Table 28. Concluded.

$C_p \times 100$ for orifice:

ψ,deg	D1	D3	D4	D19	D22	D23	D25	D13	D12	D11
309.5	0.066	-0.258	-0.380	-0.620	-0.707	-0.656	-0.569	-0.375	-0.213	0.235
310.9	0.067	-0.261	-0.388	-0.630	-0.687	-0.633	-0.546	-0.397	-0.219	0.236
312.3	0.071	-0.272	-0.380	-0.625	-0.665	-0.613	-0.514	-0.393	-0.231	0.237
313.7	0.069	-0.264	-0.374	-0.607	-0.650	-0.611	-0.515	-0.361	-0.207	0.237
315.1	0.070	-0.261	-0.372	-0.593	-0.652	-0.628	-0.534	-0.323	-0.175	0.240
316.5	0.067	-0.260	-0.360	-0.589	-0.657	-0.646	-0.549	-0.318	-0.163	0.241
317.9	0.061	-0.245	-0.360	-0.590	-0.658	-0.656	-0.567	-0.329	-0.154	0.239
319.3	0.065	-0.244	-0.368	-0.583	-0.668	-0.678	-0.593	-0.318	-0.166	0.237
320.8	0.068	-0.247	-0.371	-0.591	-0.677	-0.698	-0.627	-0.334	-0.150	0.238
322.2	0.073	-0.253	-0.376	-0.604	-0.684	-0.710	-0.658	-0.367	-0.170	0.239
323.6	0.073	-0.255	-0.391	-0.619	-0.691	-0.740	-0.701	-0.378	-0.199	0.241
325.0	0.075	-0.264	-0.401	-0.619	-0.707	-0.774	-0.746	-0.399	-0.204	0.241
326.4	0.071	-0.270	-0.394	-0.622	-0.714	-0.794	-0.773	-0.417	-0.221	0.242
327.8	0.067	-0.267	-0.393	-0.628	-0.716	-0.806	-0.807	-0.439	-0.227	0.241
329.2	0.067	-0.265	-0.394	-0.621	-0.722	-0.835	-0.847	-0.469	-0.244	0.241
330.6	0.067	-0.275	-0.392	-0.617	-0.718	-0.847	-0.868	-0.504	-0.272	0.240
332.0	0.075	-0.266	-0.392	-0.623	-0.724	-0.859	-0.893	-0.530	-0.307	0.240
333.4	0.074	-0.266	-0.396	-0.622	-0.737	-0.878	-0.911	-0.525	-0.316	0.239
334.8	0.066	-0.278	-0.400	-0.626	-0.737	-0.893	-0.925	-0.533	-0.313	0.238
336.2	0.063	-0.278	-0.400	-0.623	-0.737	-0.895	-0.934	-0.533	-0.330	0.237
337.6	0.064	-0.266	-0.395	-0.619	-0.738	-0.907	-0.954	-0.530	-0.316	0.234
339.0	0.061	-0.260	-0.382	-0.613	-0.740	-0.929	-0.978	-0.532	-0.314	0.231
340.4	0.060	-0.250	-0.378	-0.600	-0.743	-0.943	-0.984	-0.552	-0.317	0.228
341.8	0.058	-0.249	-0.380	-0.597	-0.740	-0.961	-0.998	-0.541	-0.321	0.227
343.3	0.052	-0.247	-0.364	-0.592	-0.741	-0.990	-1.031	-0.532	-0.315	0.227
344.7	0.043	-0.232	-0.362	-0.587	-0.748	-1.011	-1.052	-0.539	-0.307	0.228
346.1	0.050	-0.232	-0.346	-0.575	-0.754	-1.023	-1.064	-0.552	-0.313	0.229
347.5	0.058	-0.222	-0.344	-0.572	-0.749	-1.046	-1.063	-0.562	-0.324	0.229
348.9	0.058	-0.216	-0.352	-0.562	-0.751	-1.048	-1.054	-0.567	-0.332	0.230
350.3	0.062	-0.216	-0.339	-0.562	-0.763	-1.056	-1.050	-0.591	-0.335	0.230
351.7	0.069	-0.224	-0.334	-0.565	-0.770	-1.071	-1.057	-0.607	-0.356	0.230
353.1	0.076	-0.227	-0.342	-0.561	-0.783	-1.053	-1.062	-0.630	-0.380	0.231
354.5	0.072	-0.220	-0.350	-0.574	-0.802	-1.052	-1.058	-0.629	-0.394	0.231
355.9	0.070	-0.229	-0.350	-0.579	-0.810	-1.060	-1.062	-0.625	-0.387	0.231
357.3	0.073	-0.229	-0.349	-0.590	-0.816	-1.055	-1.057	-0.658	-0.401	0.230
358.7	0.076	-0.227	-0.362	-0.603	-0.819	-1.040	-1.040	-0.654	-0.407	0.229
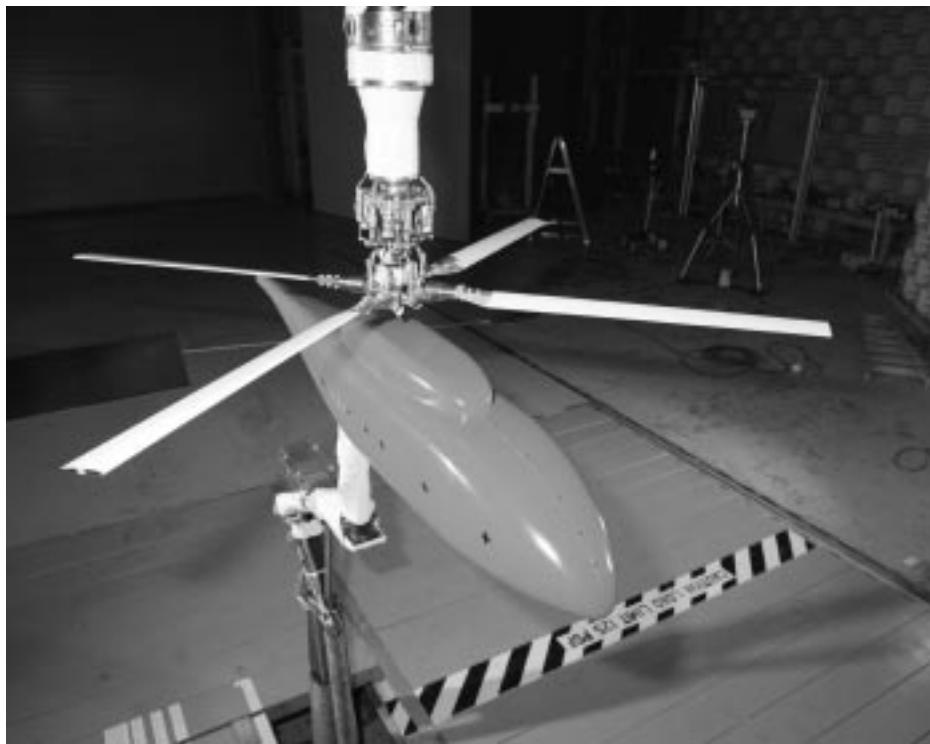
L97-03935
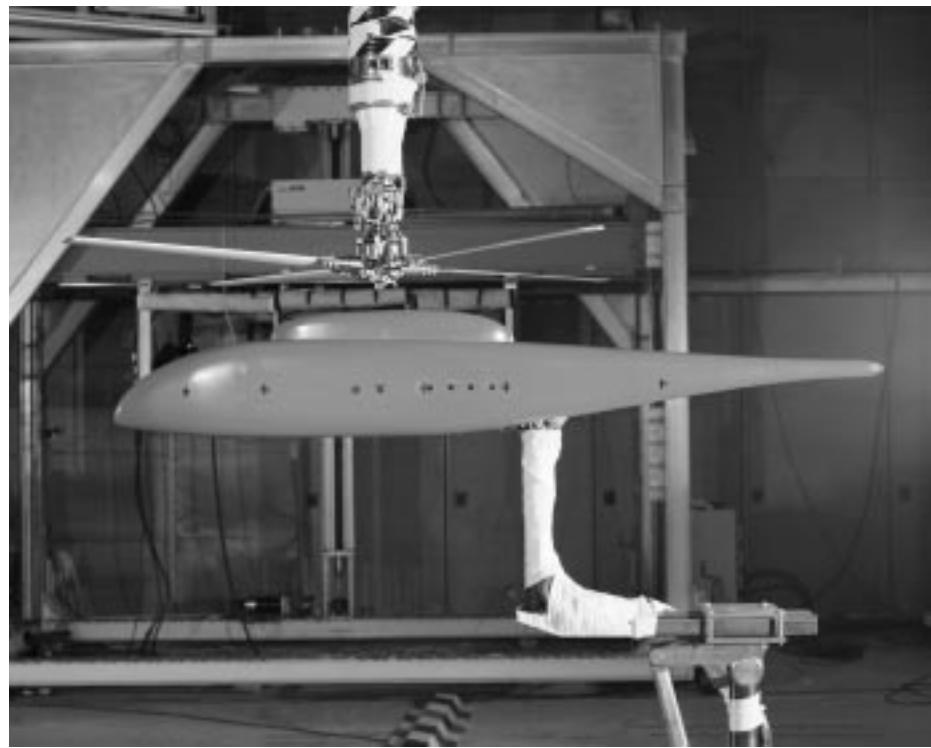
L97-03936

Figure 1. Photographs of the 2-meter ROtor Body INterference (ROBIN) configuration installed in the 14- by 22-Foot Subsonic Tunnel test section.
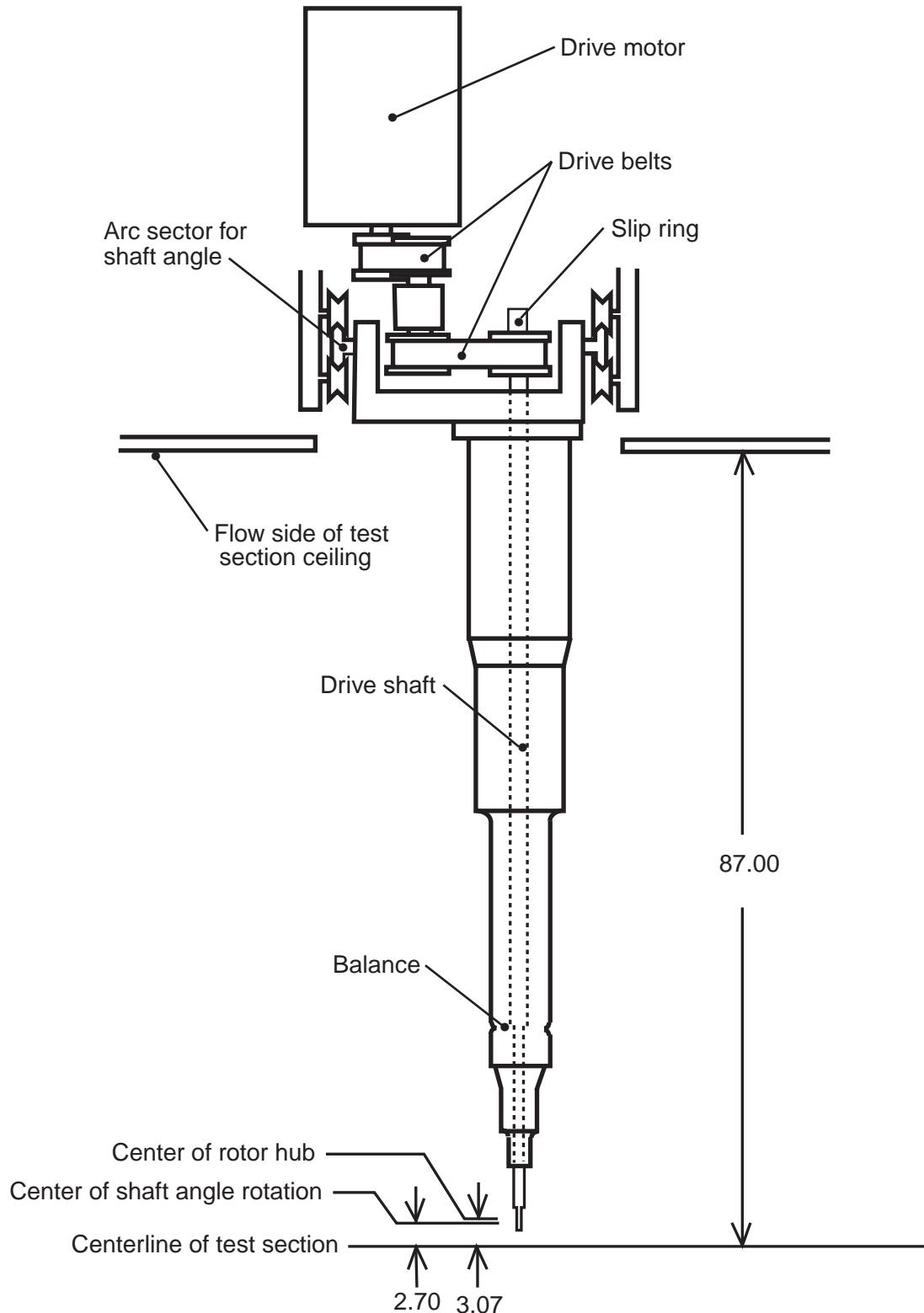
Figure 2. Sketch of the rear view of the Isolated Rotor Test System. (All dimensions in inches.)
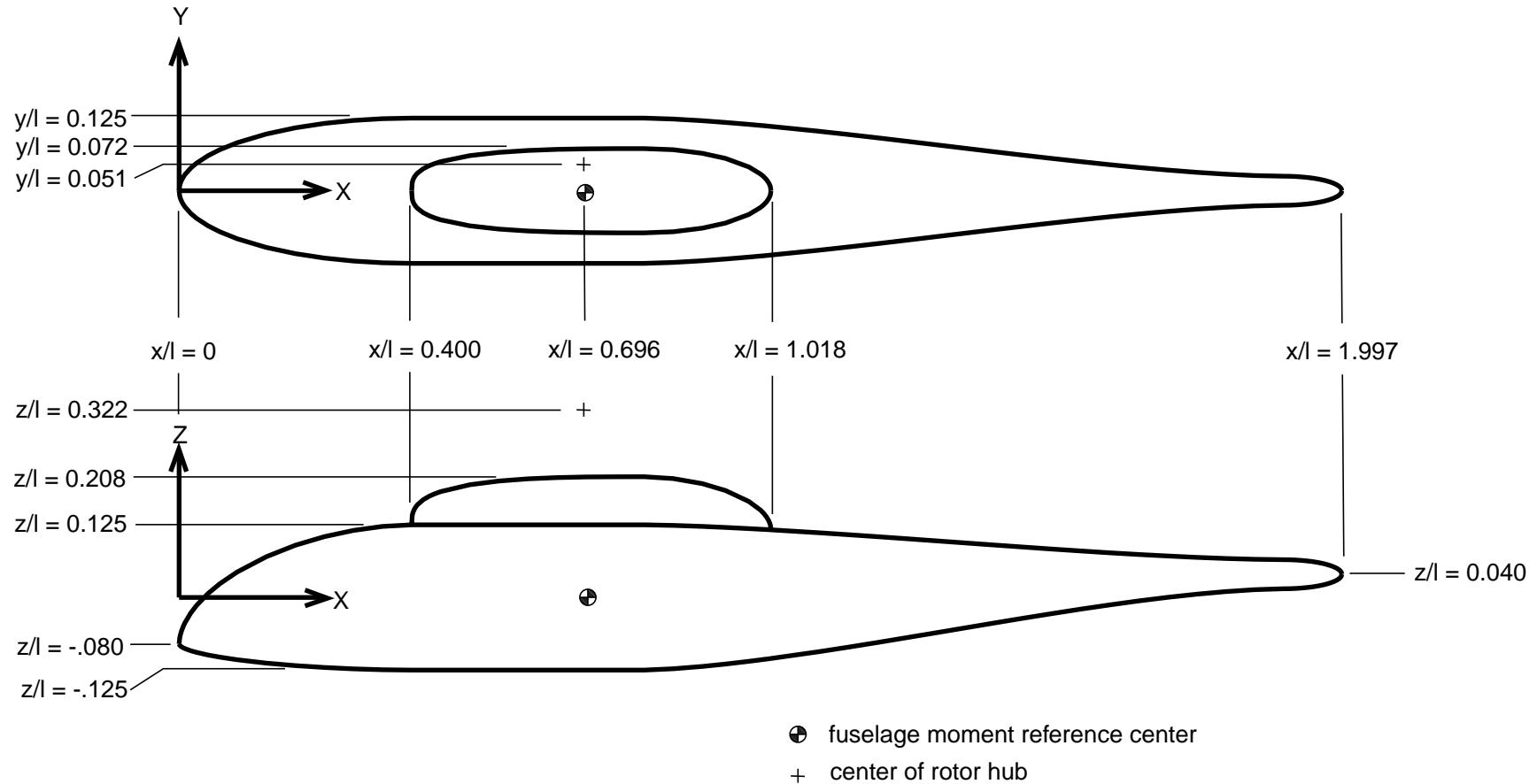
Figure 3. Sketch of the ROBIN configuration.

x/l = 0.35   x/l = 0.89   x/l = 1.17   x/l = 1.35   x/l = 1.54

Views from rear

Measurement type
○   Steady
●   Unsteady

x/l =   0.05   0.20   0.35   0.60   1.00   1.35
           0.09   0.25   0.45   0.89   1.17   1.54
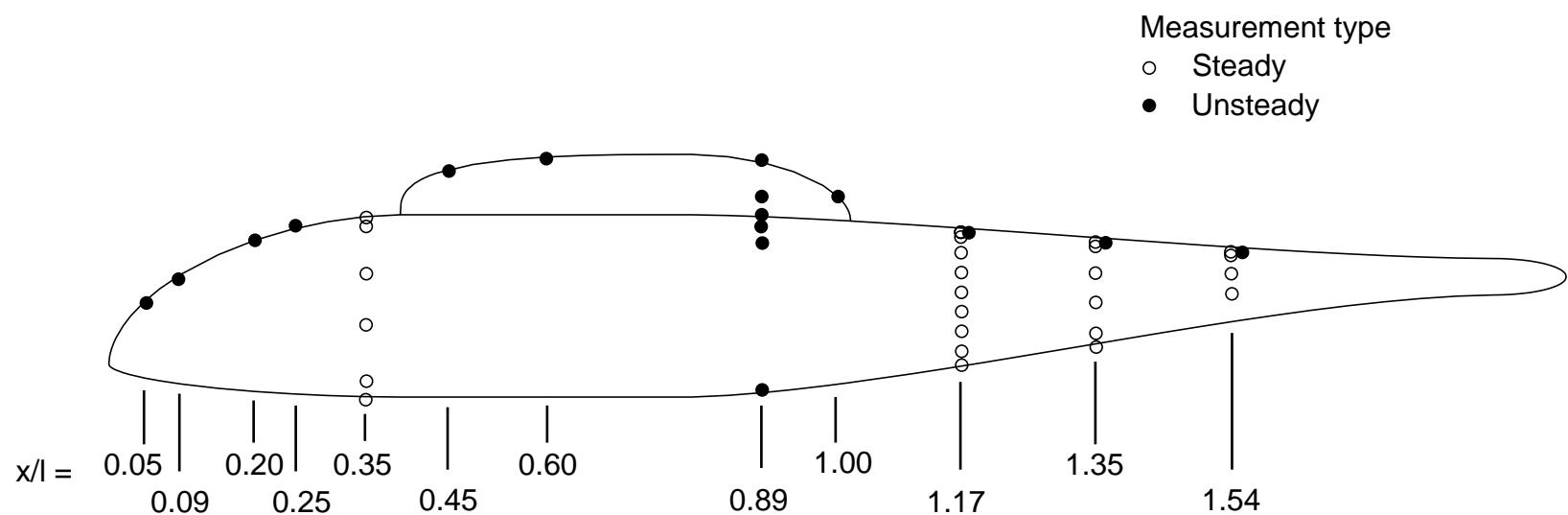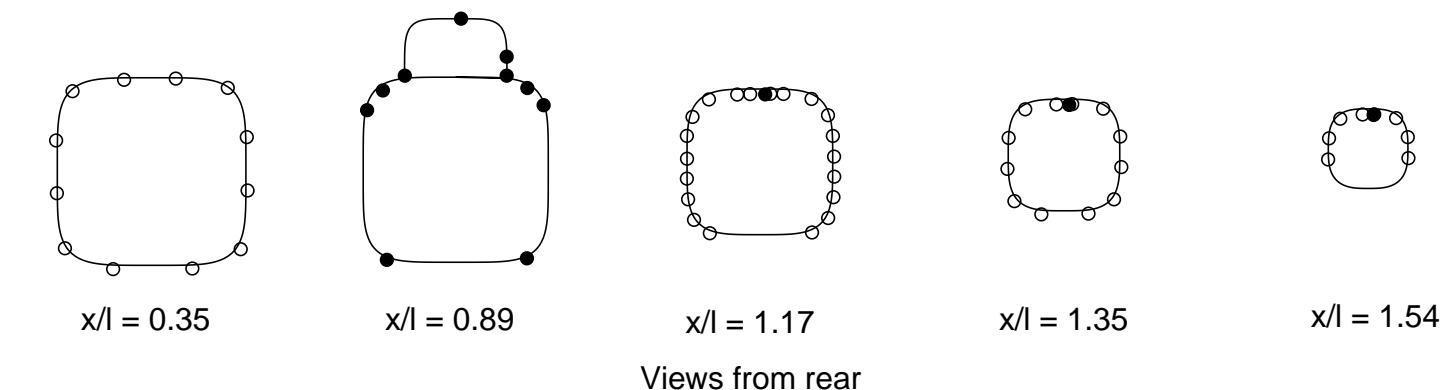
Figure 4. Locations of the static pressure orifices.
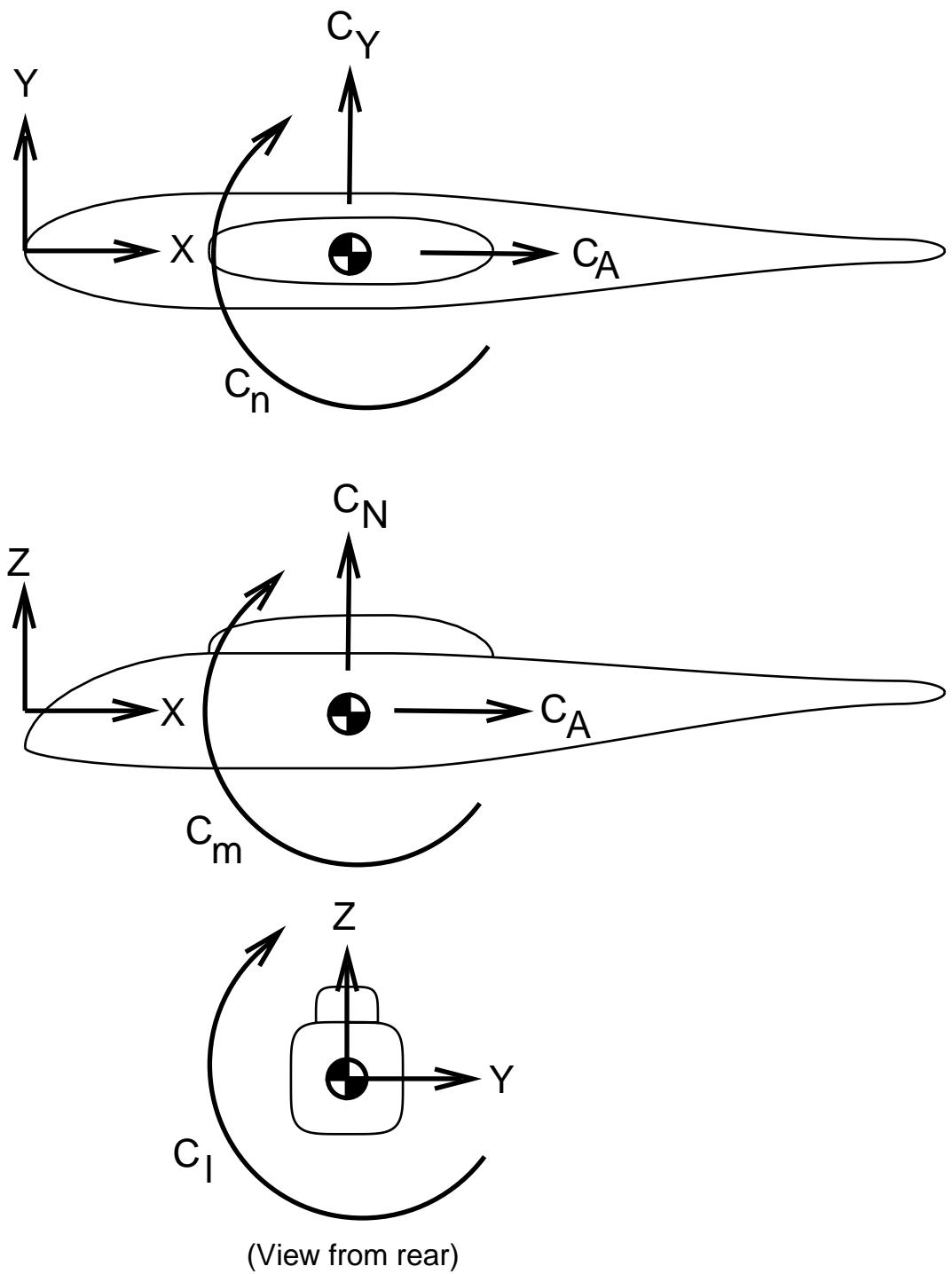
Figure 5. Model axes and sign conventions. Positive directions indicated by arrows.
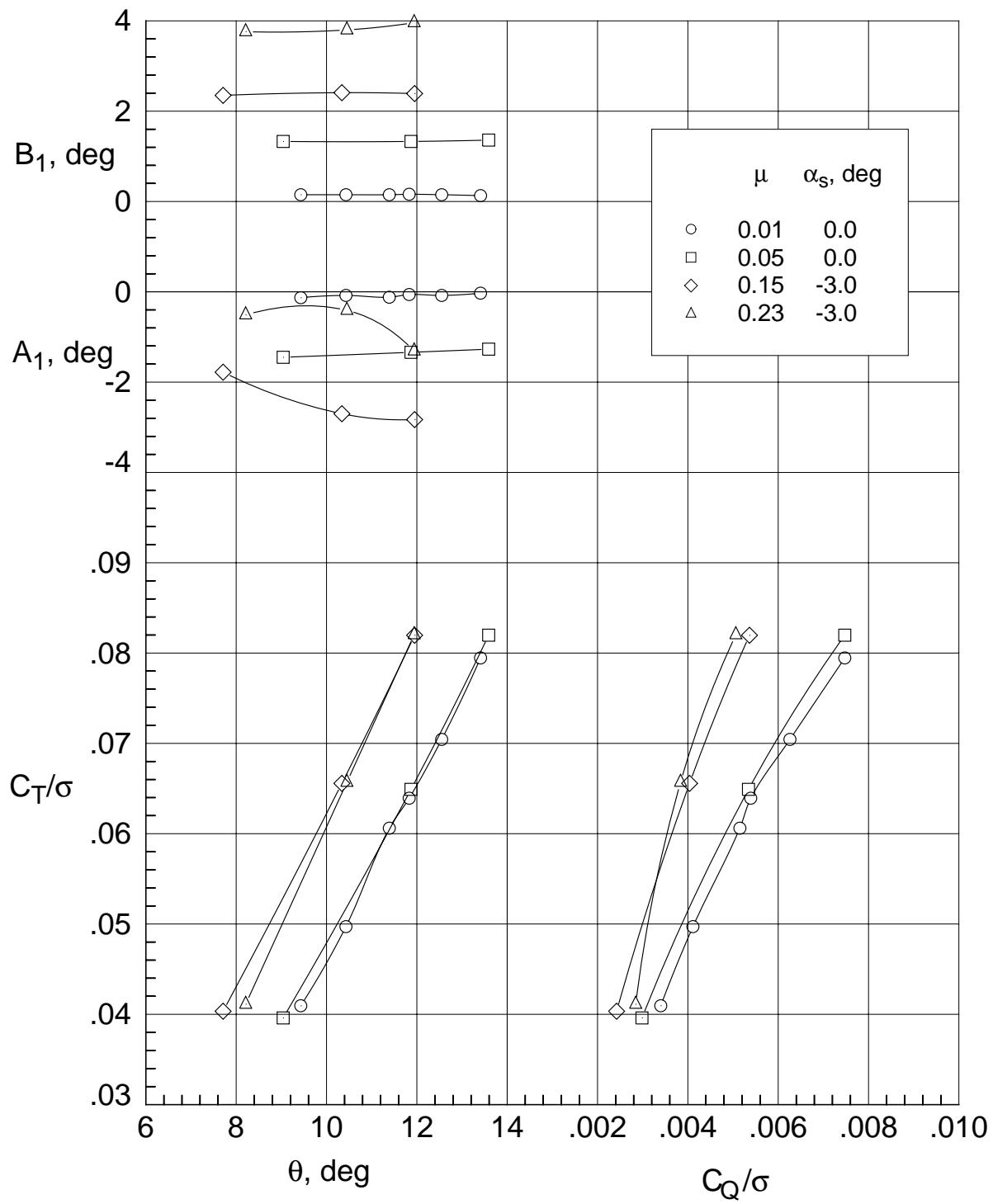
Figure 6. Rotor aerodynamic characteristics in the presence of the ROBIN body.
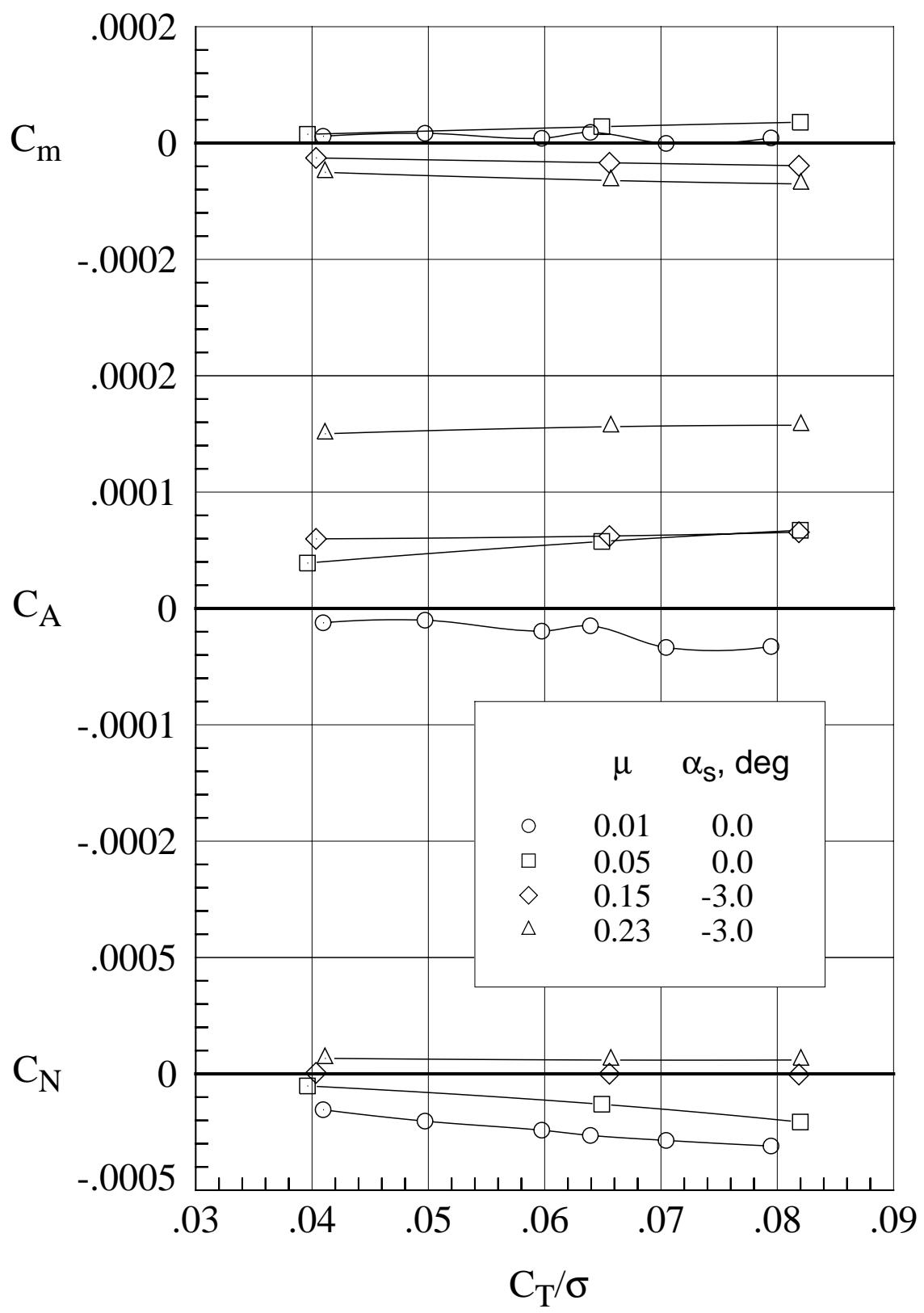
Figure 7. Variation of the modified body force and moment coefficients with rotor thrust coefficient.
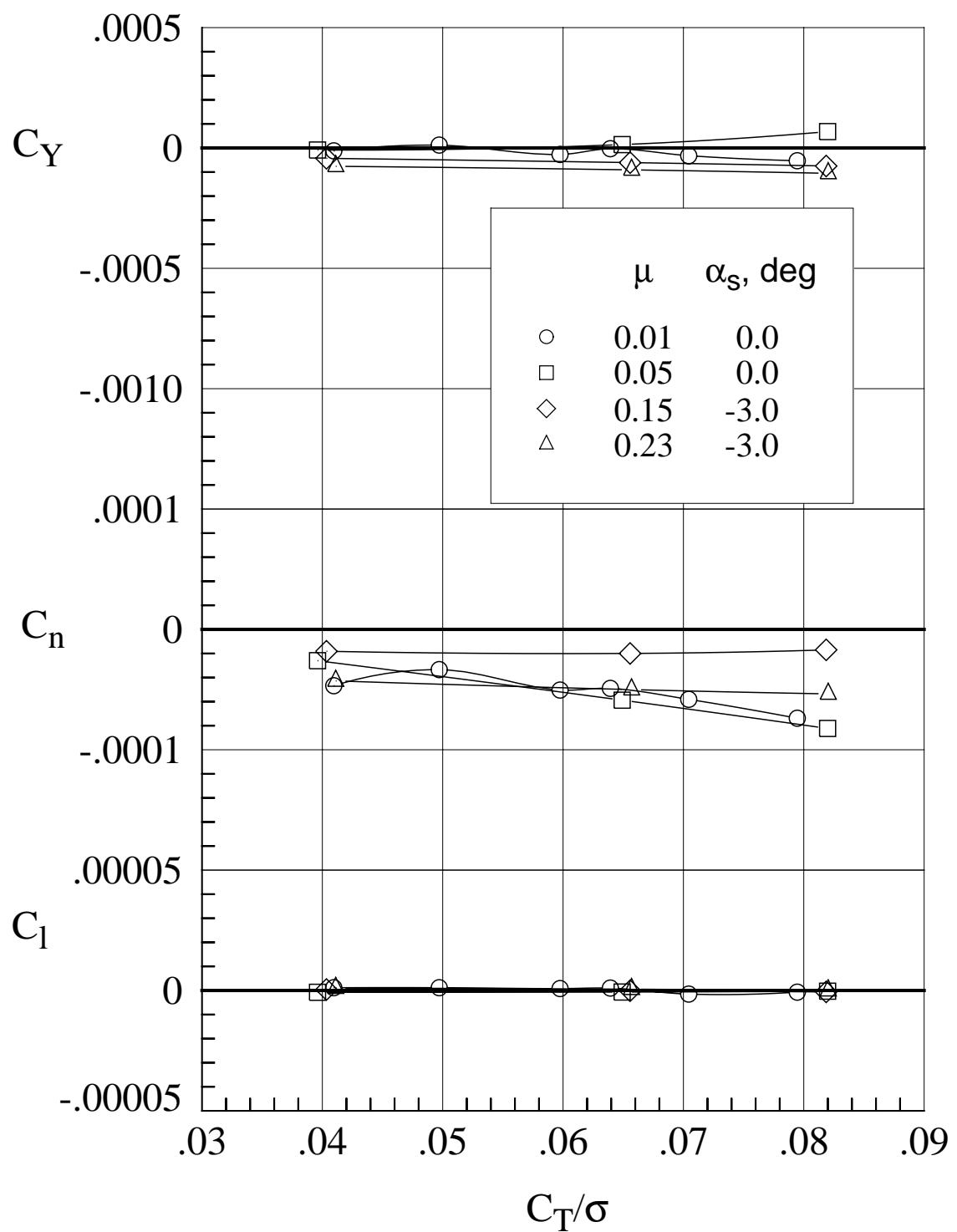
Figure 7. Concluded.
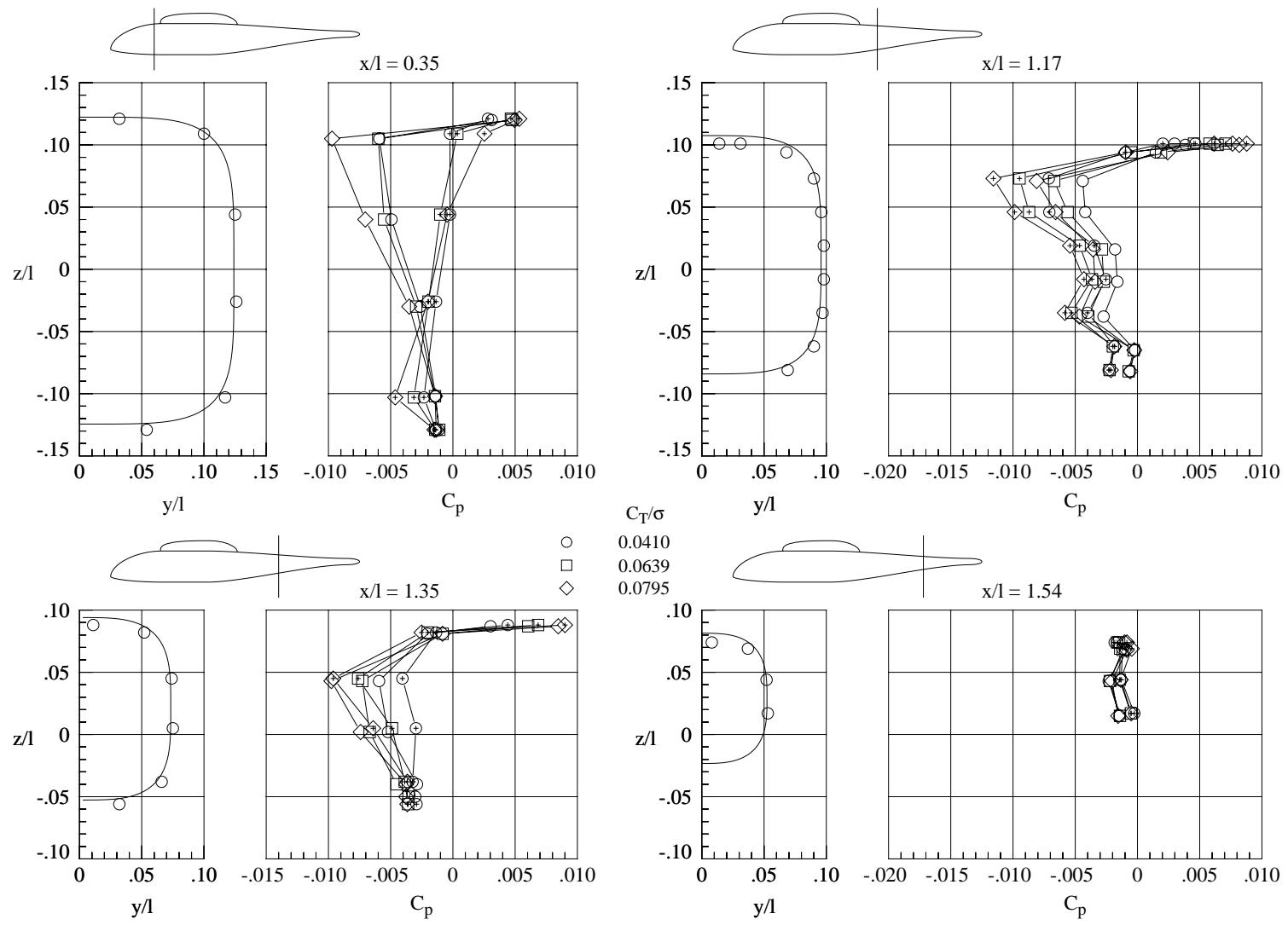
(a) $\mu = 0.01$, $\alpha_s = 0.0°$.

Figure 8 . Steady pressure distribution on the ROBIN configuration. (A "+" within symbol denotes data from starboard half of model when looking upstream.)

x/l = 0.35

x/l = 1.17

C_T/σ

○ 0.0396
□ 0.0649
◇ 0.0820

x/l = 1.35

x/l = 1.54

(b) μ = 0.05, α_S= 0.0.°
Figure 8. Continued.

x/l = 0.35

x/l = 1.17

C_T/σ

○   0.0403
□   0.0656
◇   0.0819

x/l = 1.35

x/l = 1.54
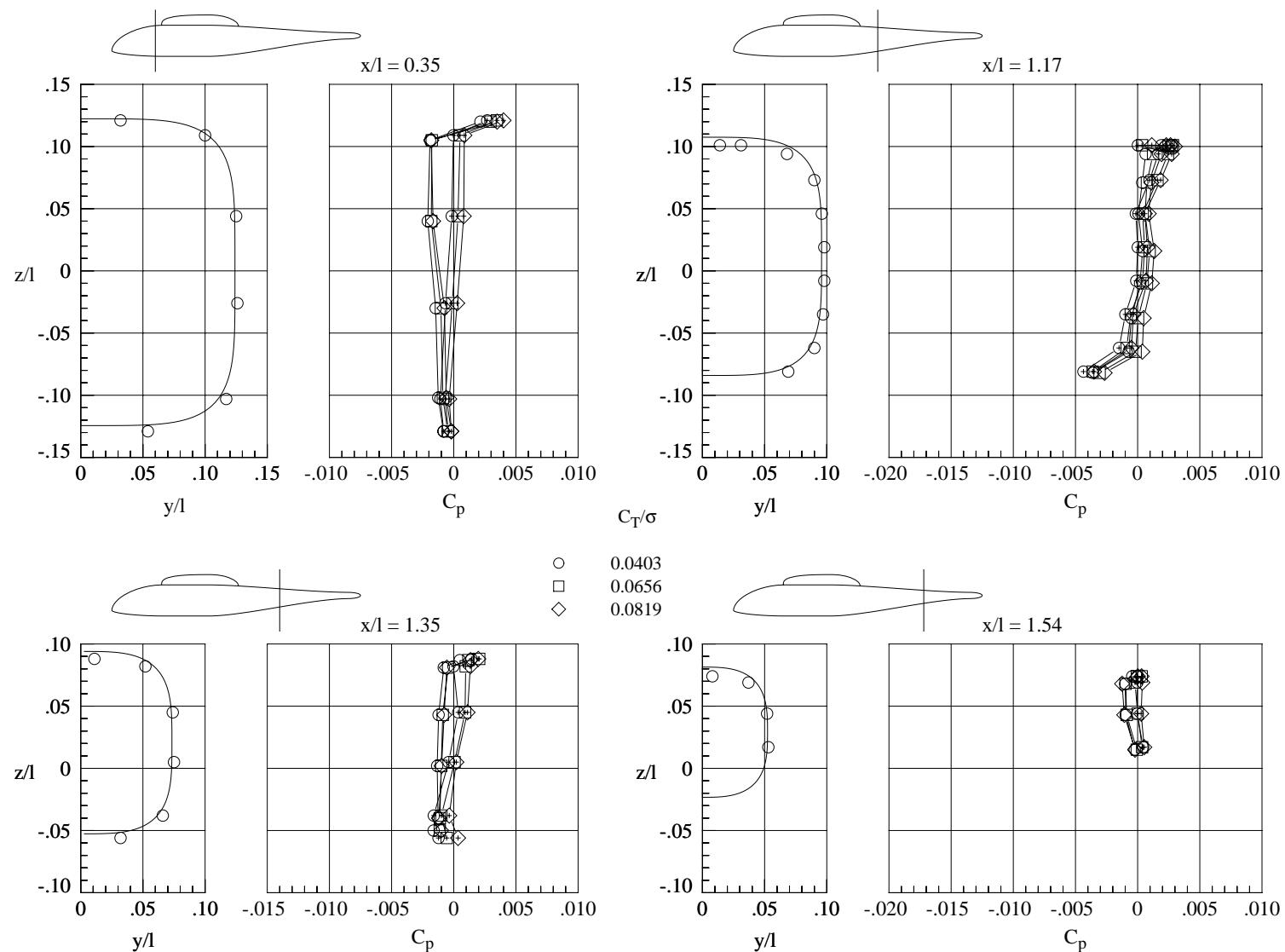
(c) $\mu = 0.15$, $\alpha_S = -3.0.^o$
Figure 8. Continued.
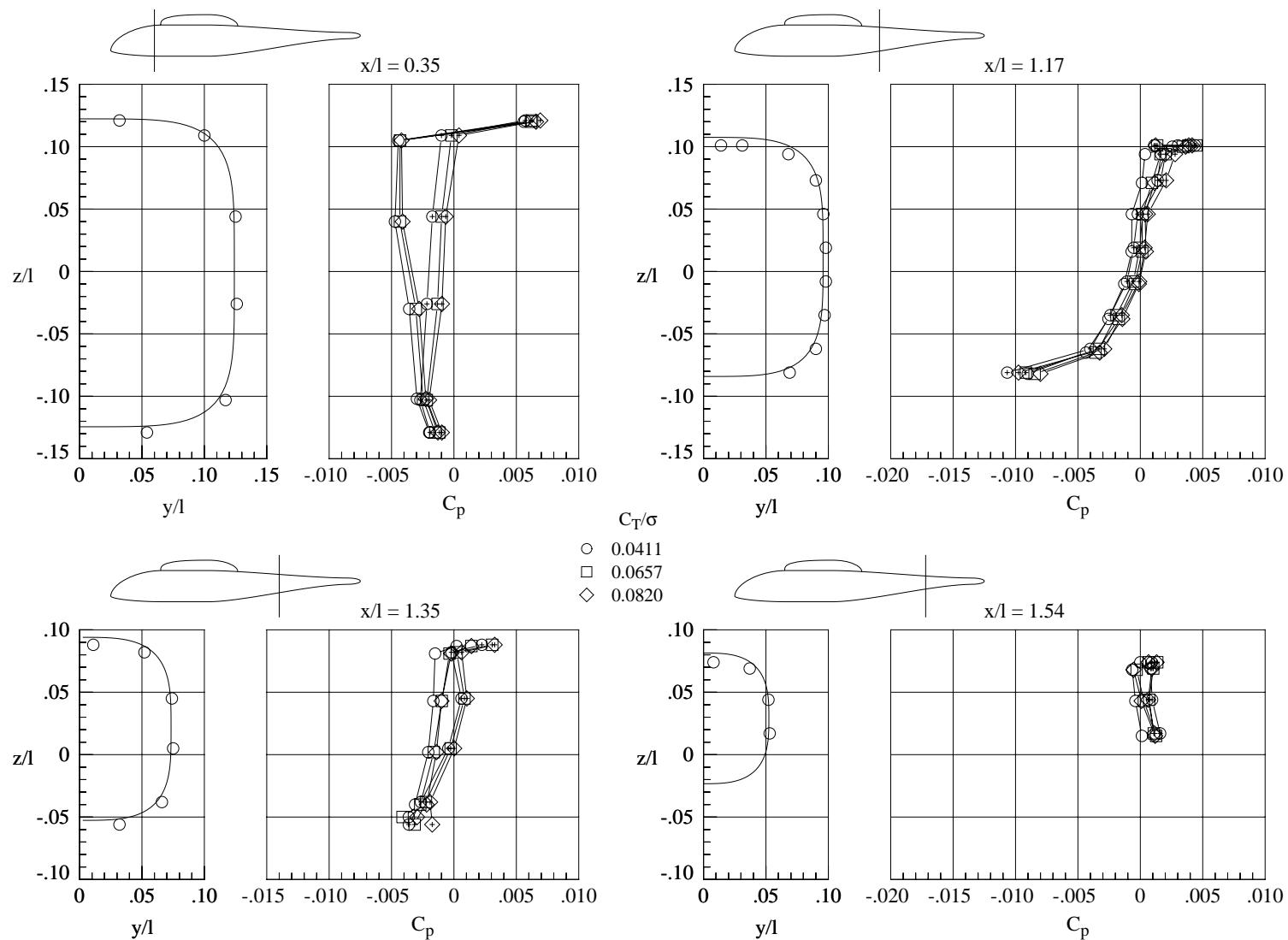
(d) $\mu = 0.23$, $\alpha_s = -3.0^o$.

Figure 8. Concluded.
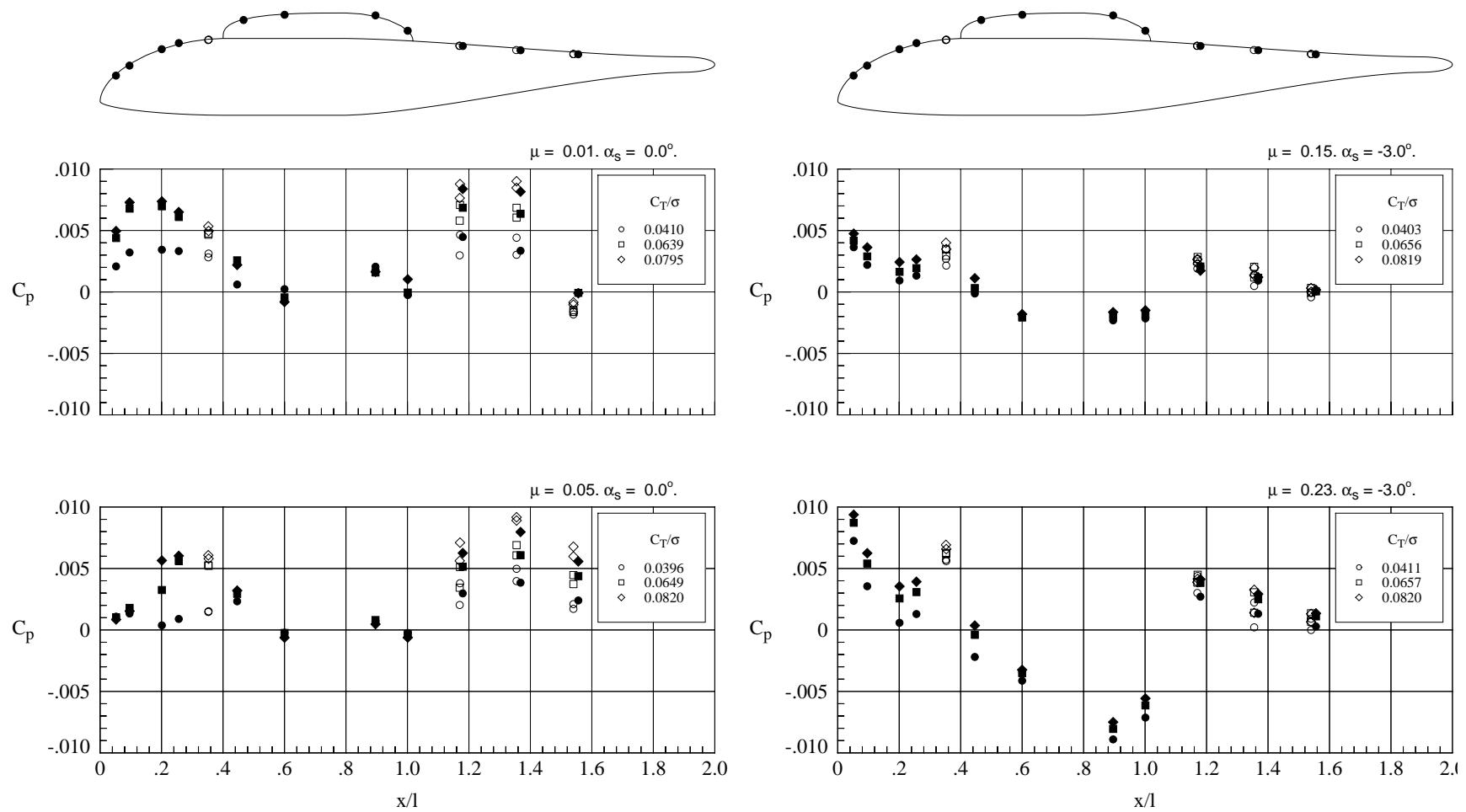
Figure 9. Pressure coefficient on the model upper surface. (Solid symbols denote averaged results from the unsteady pressure transducers.)
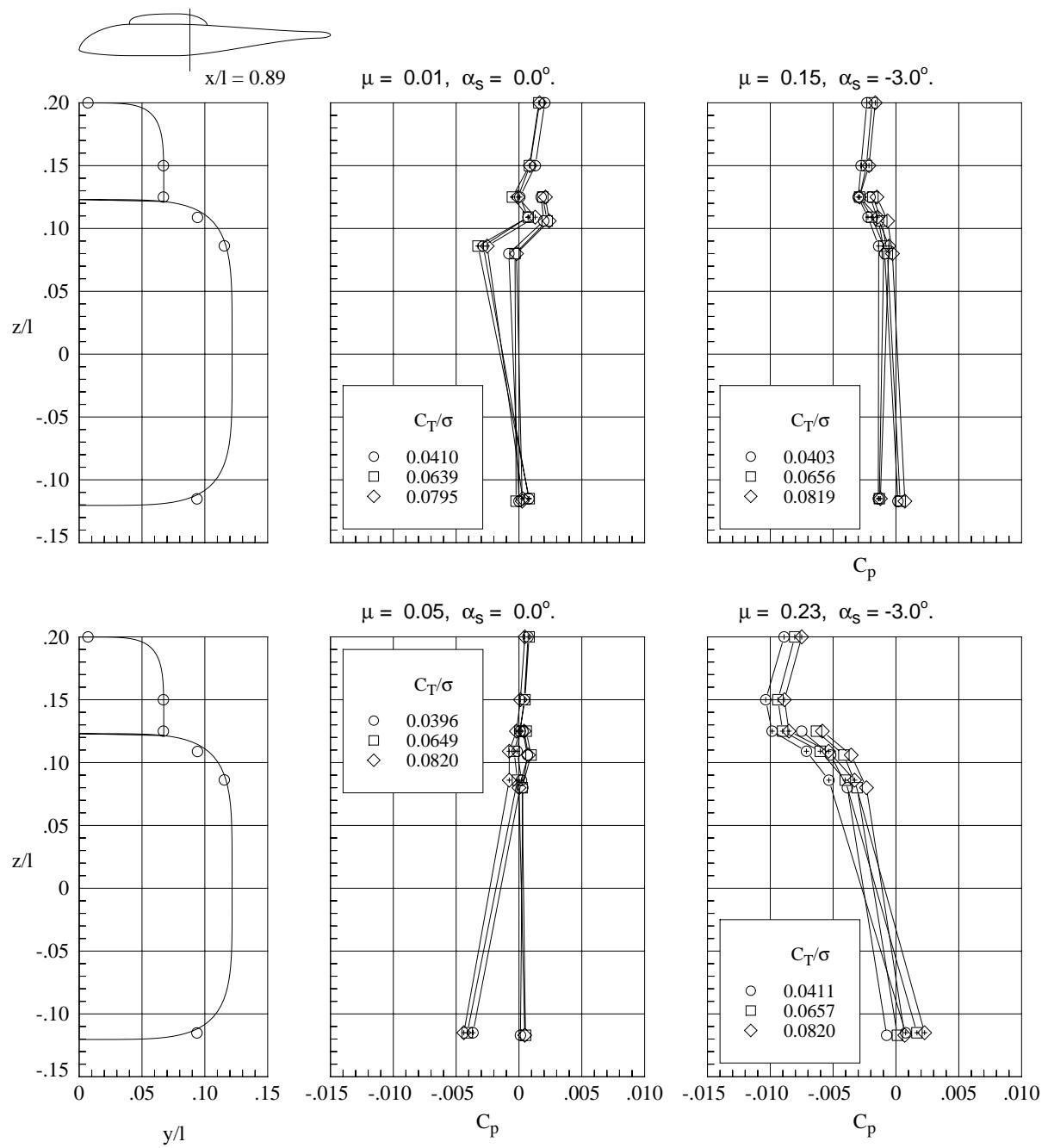
Figure 10. Pressure coefficients obtained by averaging results from unsteady pressure transducers on the model at x/l=0.90. A "+" within the symbol denotes data from the starboard side of the model.

169

(a) $\mu = 0.01, \alpha_S = 0.0^o$.
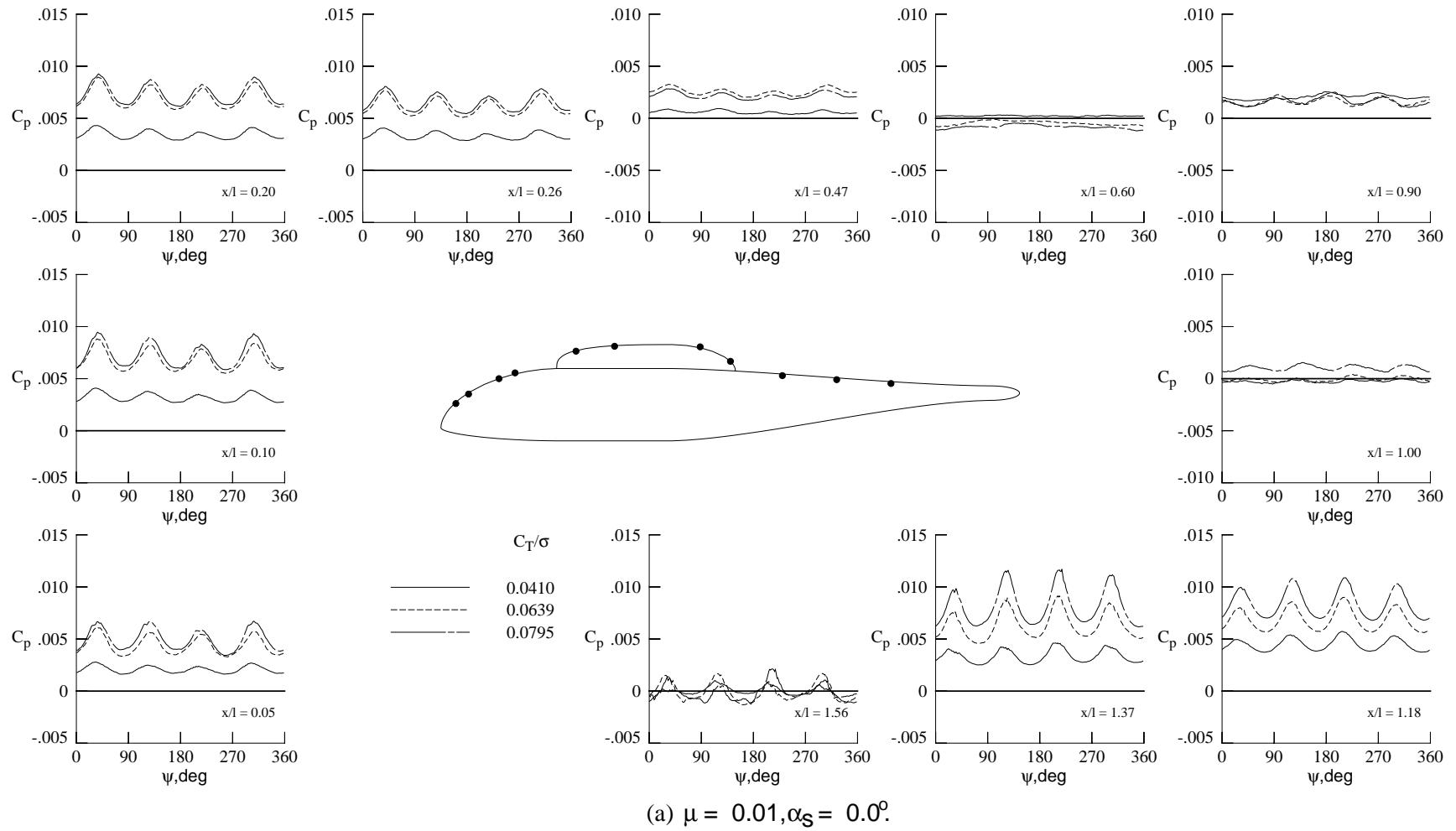
Figure 11. Periodic pressure coefficient distributions near the model centerline. (y/l = 0.007)

170

C_p .015 .010 .005 0 -.005

ψ,deg

x/l = 0.20

C_p .015 .010 .005 0 -.005

x/l = 0.26

C_p .010 .005 0 -.005 -.010

x/l = 0.47

C_p .010 .005 0 -.005 -.010

x/l = 0.60

C_p .010 .005 0 -.005 -.010

x/l = 0.90

0 90 180 270 360

C_p .015 .010 .005 0 -.005

x/l = 0.10

C_p .010 .005 0 -.005 -.010

x/l = 1.00

C_p .015 .010 .005 0 -.005

x/l = 0.05

C_T/σ

——	0.0396
– – –	0.0649
–·–·–	0.0820

C_p .015 .010 .005 0 -.005

x/l = 1.56

C_p .015 .010 .005 0 -.005

x/l = 1.37

C_p .015 .010 .005 0 -.005

x/l = 1.18

ψ,deg

(b) $\mu = 0.05, \alpha_S = 0.0^o$.

Figure 11. Continued.
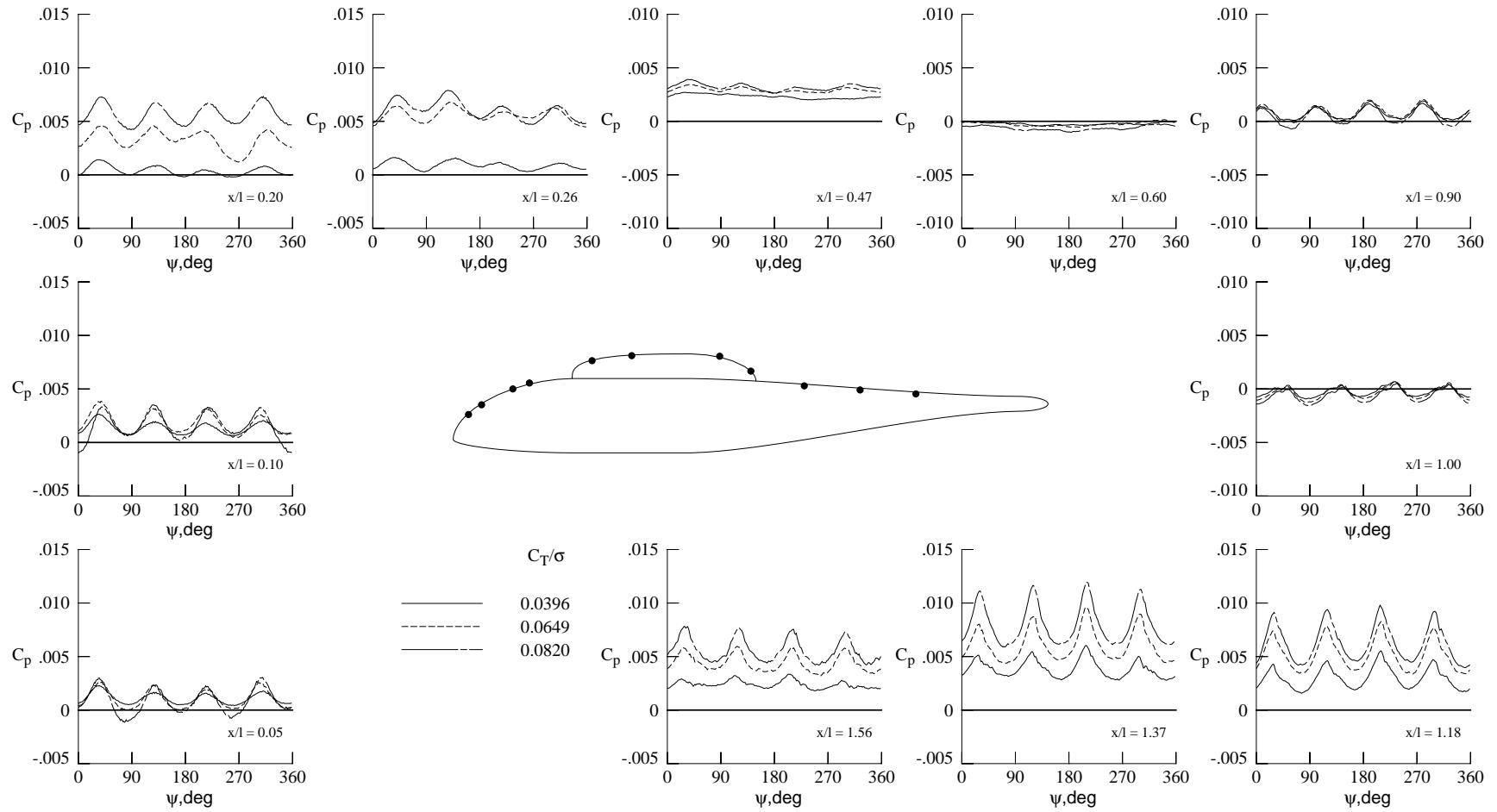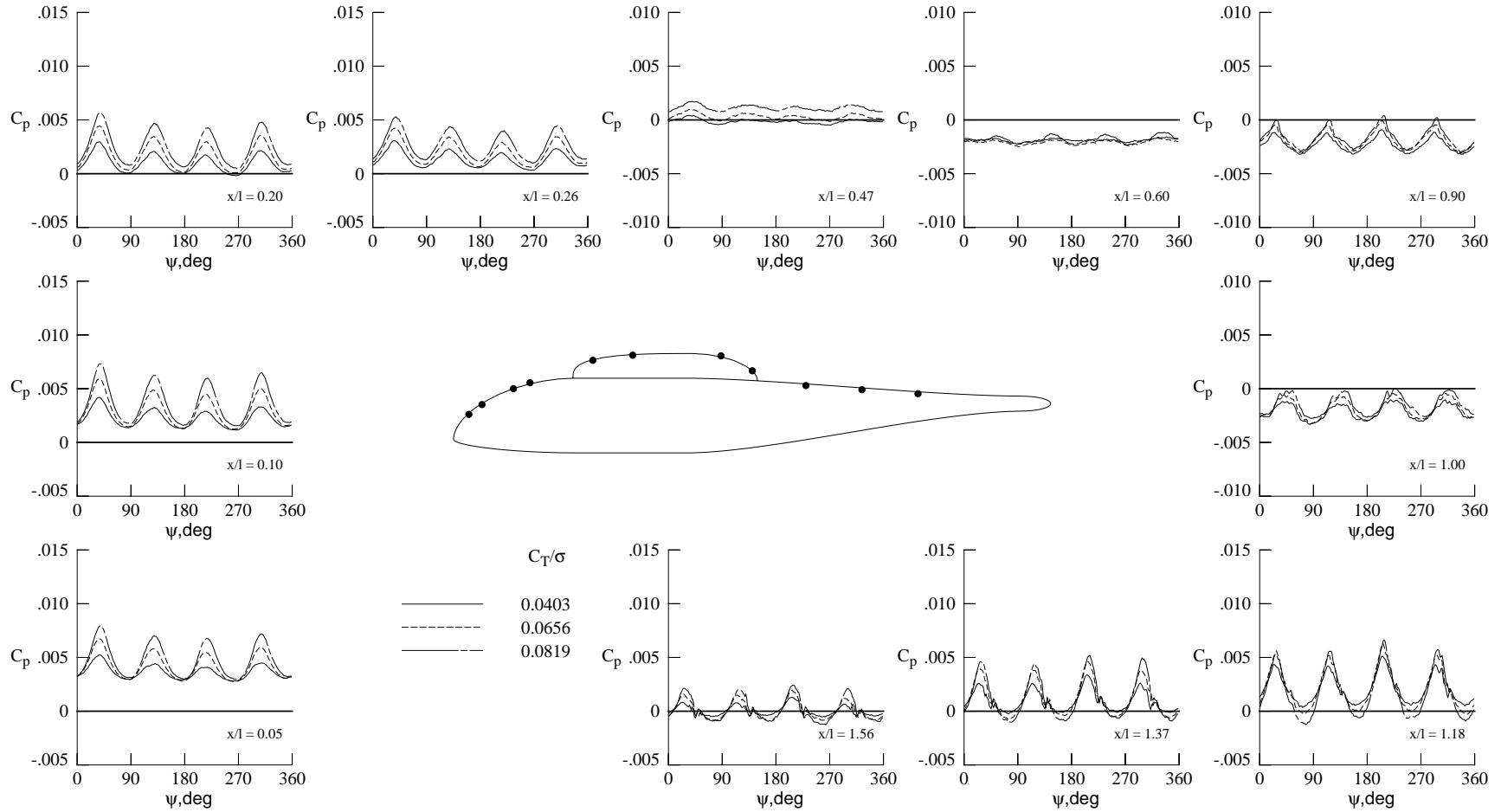
(c) $\mu = 0.15, \alpha_S = -3.0°$.

Figure 11. Continued.
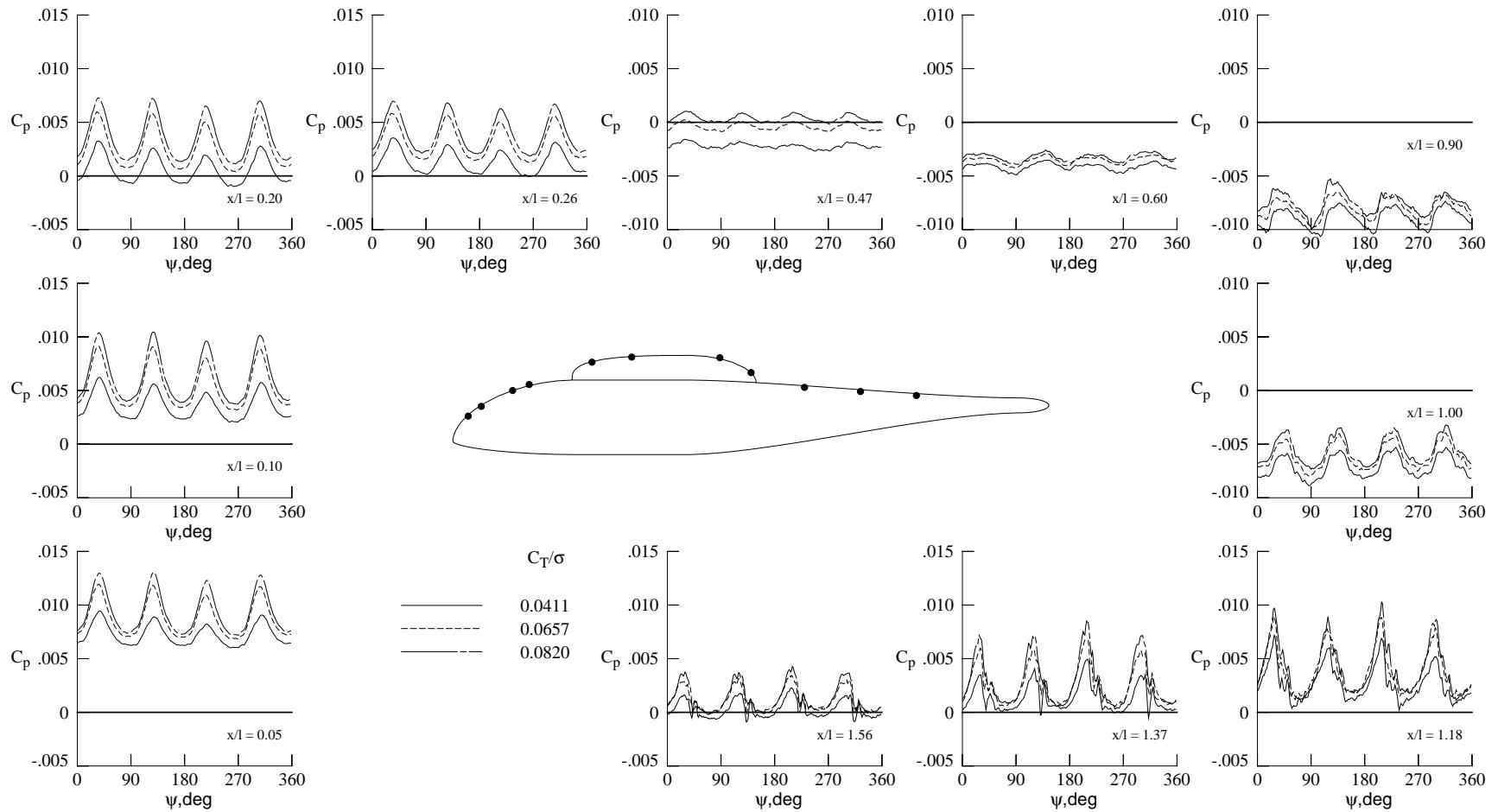
(d) $\mu = 0.23, \alpha_s = -3.0°$.
Figure 11. Concluded.

(a) $\mu = 0.01$. $\alpha_s = 0.0^\circ$.
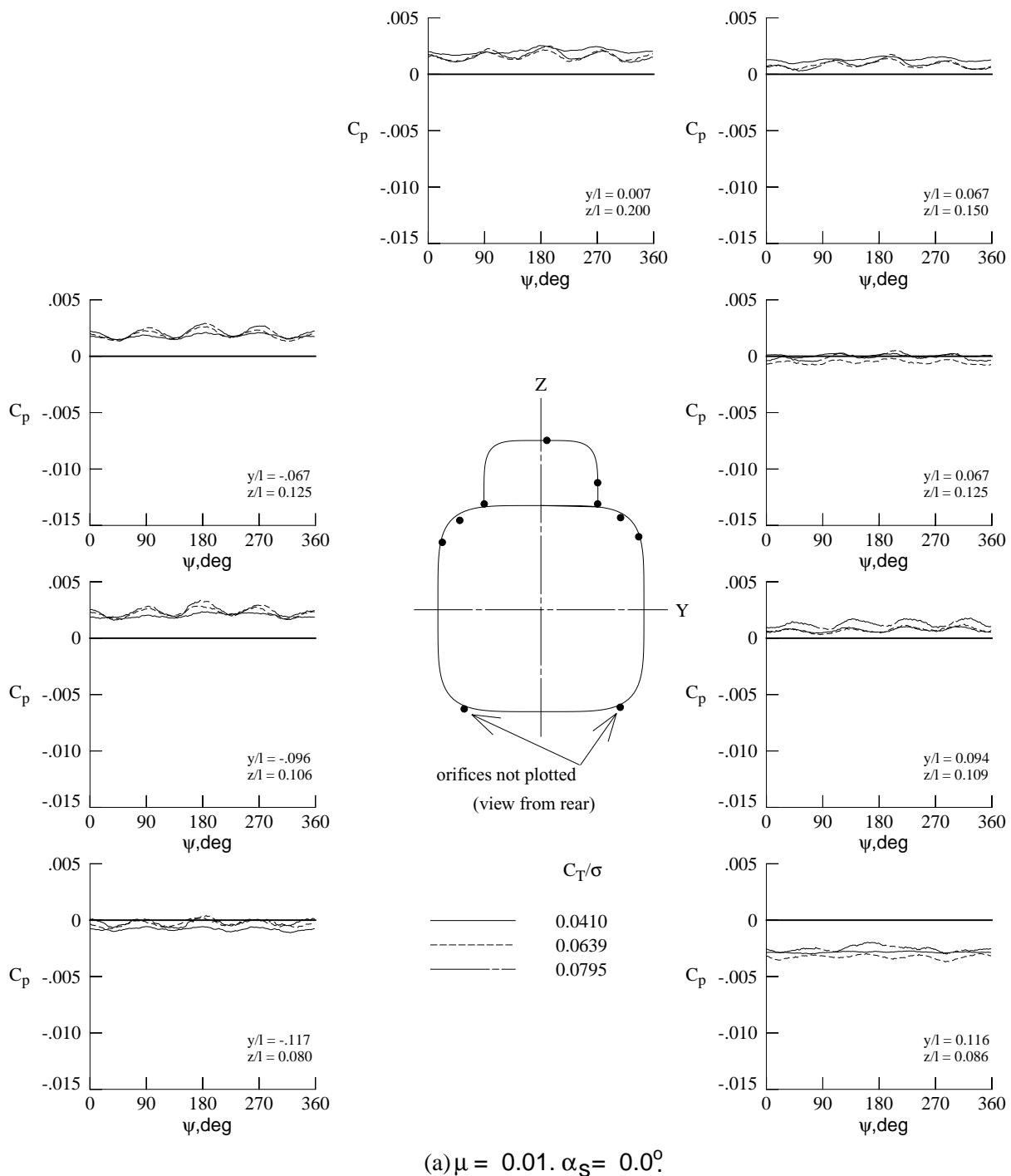
Figure 12. Periodic pressure coefficient distributions on the model cross-section at $x/l = 0.90$.

(b) μ = 0.05, α$_S$ = 0.0.^{o}

Figure 12. Continued.

C_p y/l = 0.007, z/l = 0.200

C_p y/l = 0.067, z/l = 0.150

C_p y/l = -.067, z/l = 0.125

C_p y/l = 0.067, z/l = 0.125

C_p y/l = -.096, z/l = 0.106

C_p y/l = 0.094, z/l = 0.109

C_p y/l = -.117, z/l = 0.080

C_p y/l = 0.116, z/l = 0.086

orifices not plotted (view from rear)

C_T/σ

————	0.0403
- - - -	0.0656
—·—·	0.0819
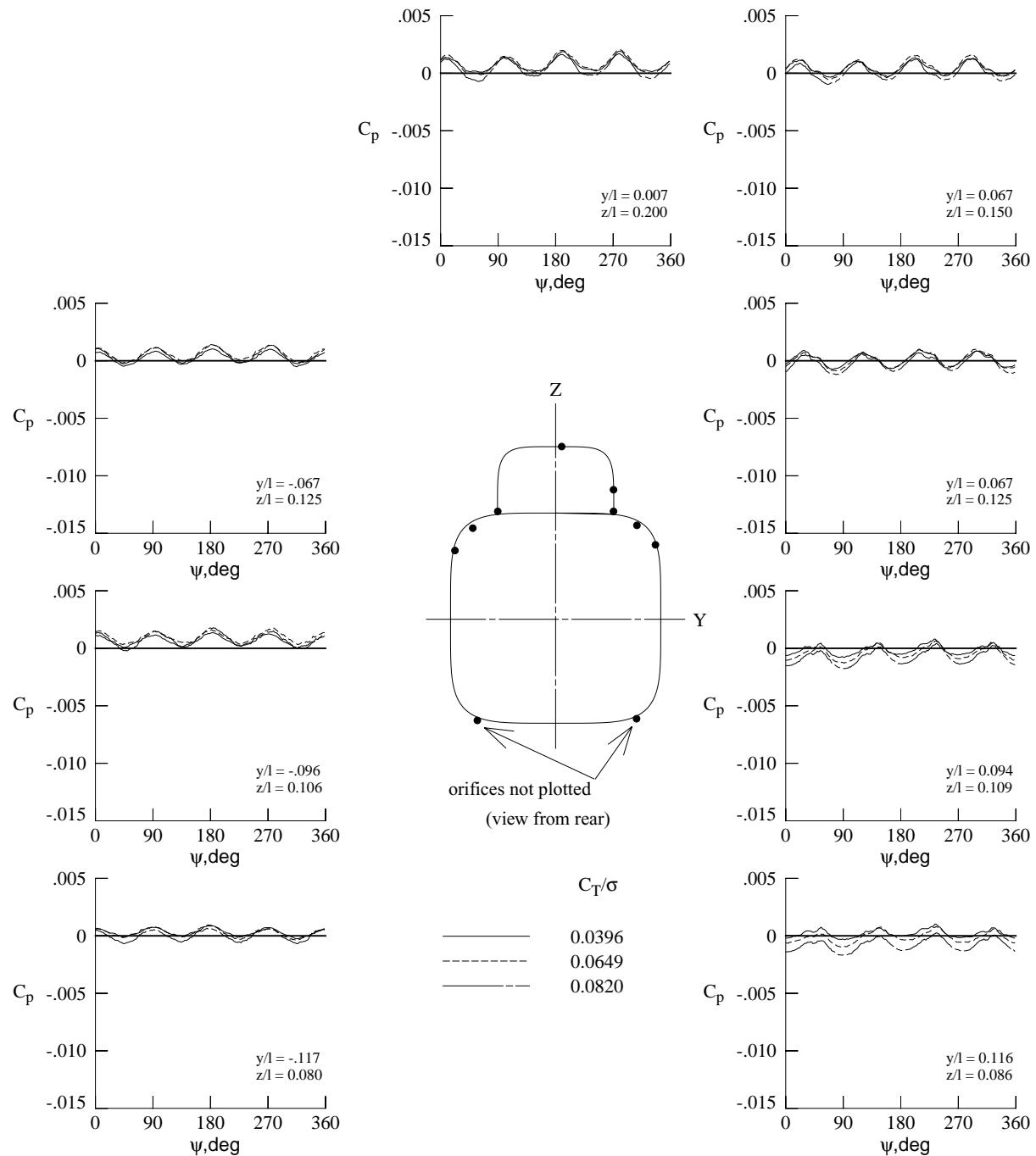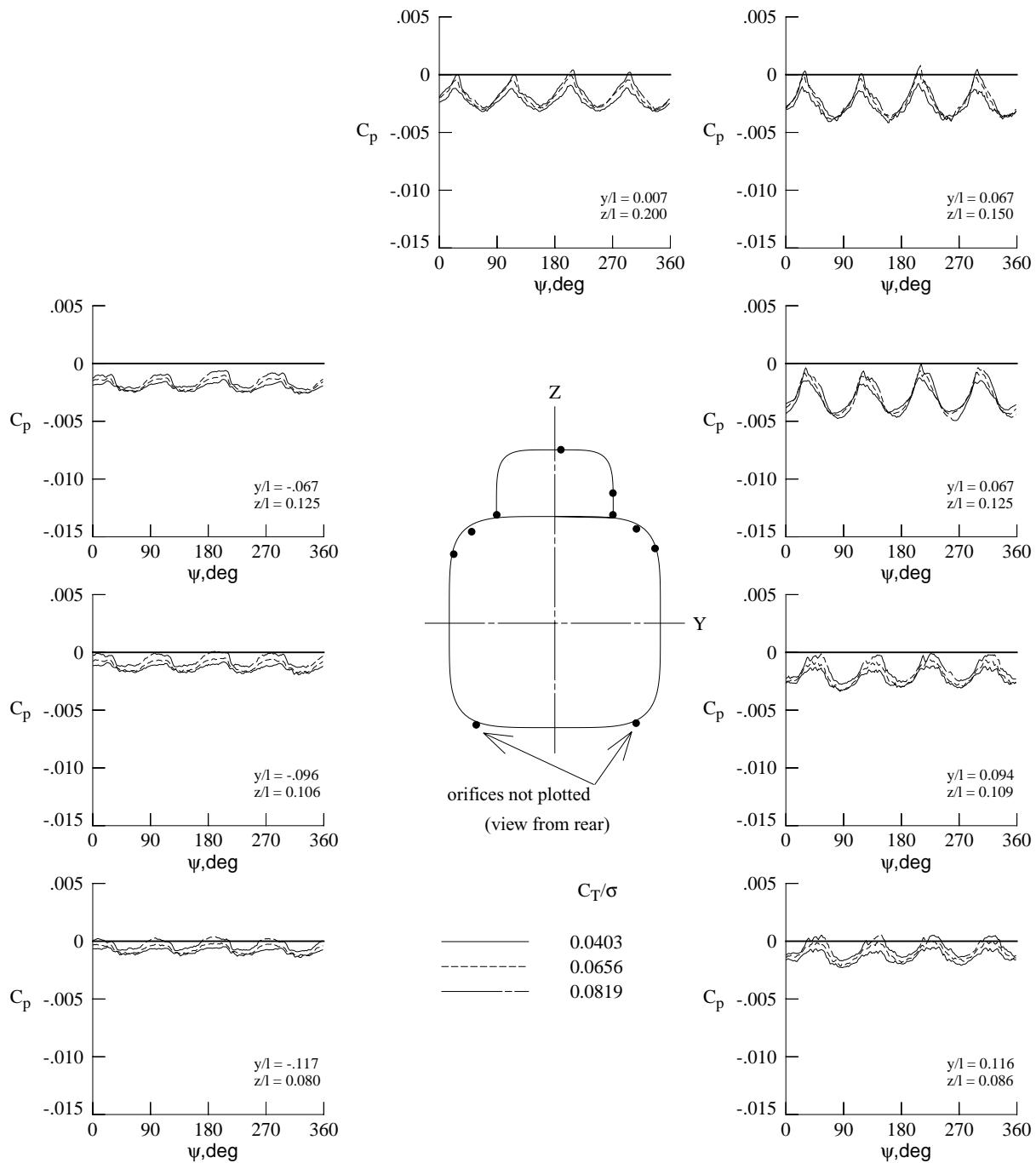
(c) $\mu = 0.15$, $\alpha_S = -3.0\,^{\circ}$

Figure 12. Continued.

176
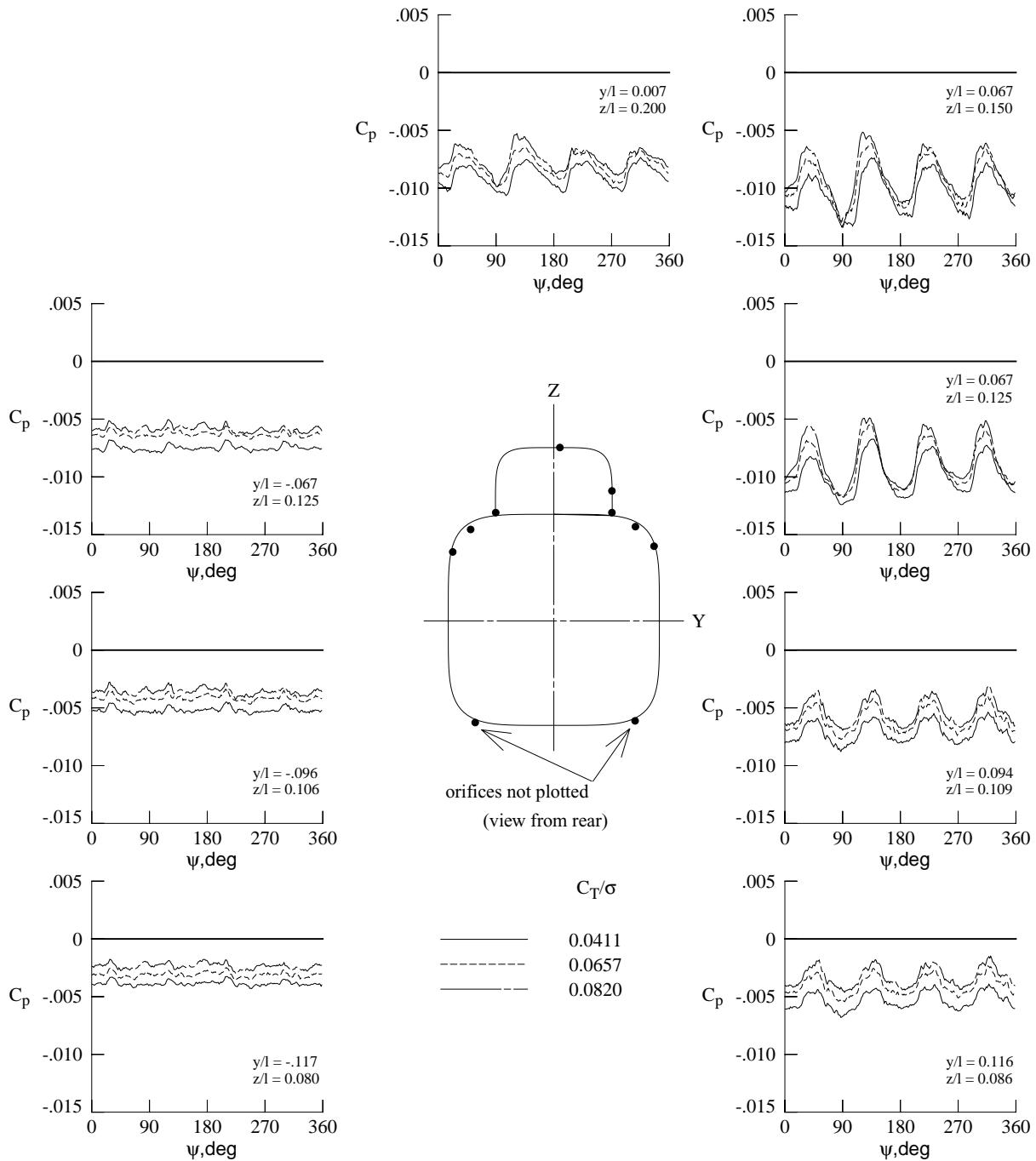
(d) $\mu = 0.23$. $\alpha_S = -3.0^\circ$.

Figure 12. Concluded.

177

(a) Starboard side.

Figure 13. Surface flow visualization photographs. $\mu = 0.05$, $\alpha_s = 0.0^o$, $C_T/\sigma = 0.0064$.

(b) Port side.

Figure 13. Concluded.
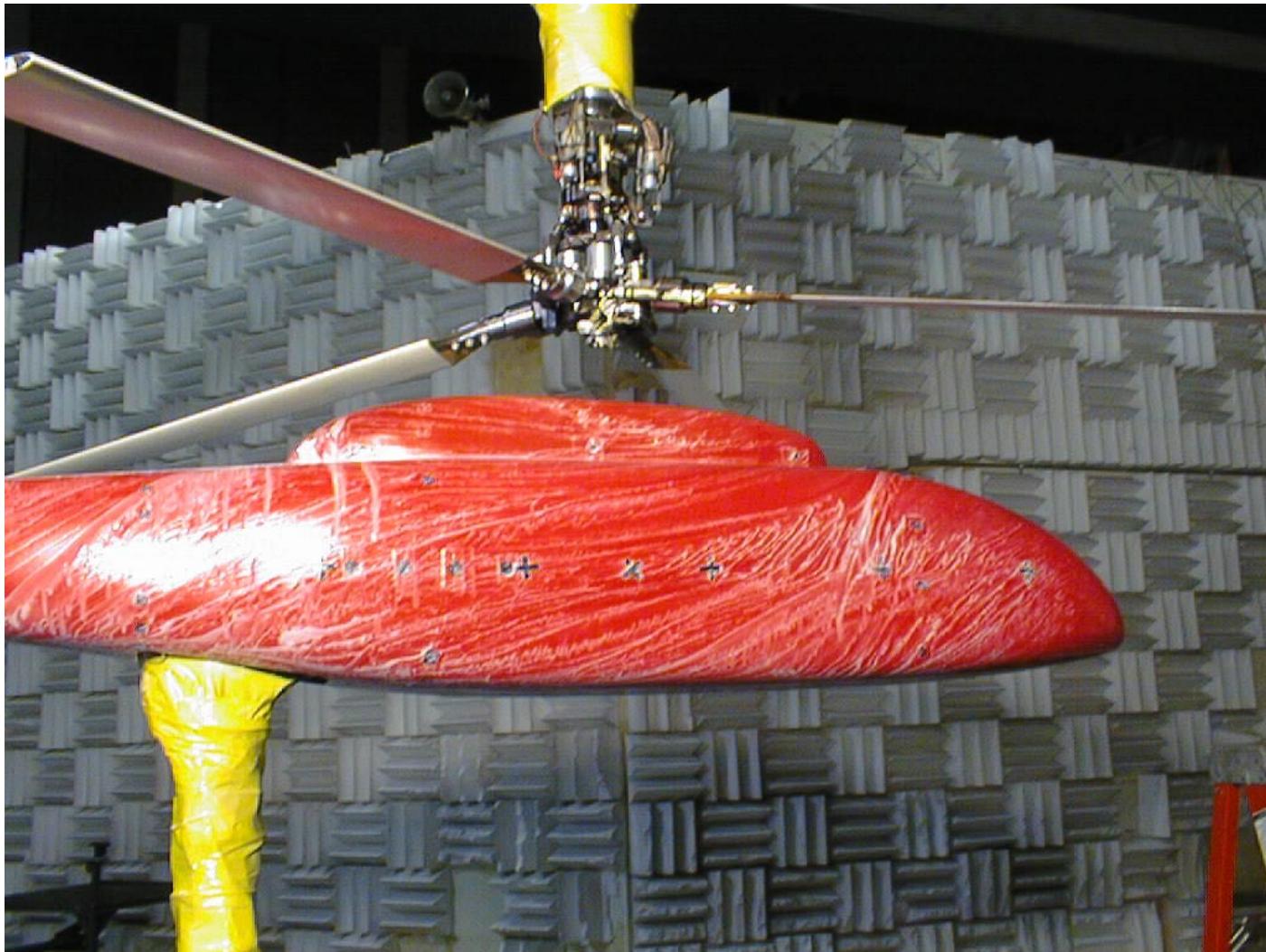
(a) Starboard side.

Figure 14. Surface flow visualization photographs. $\mu = 0.15$, $\alpha_S = -3.0^o$, $C_T/\sigma = 0.0064$.
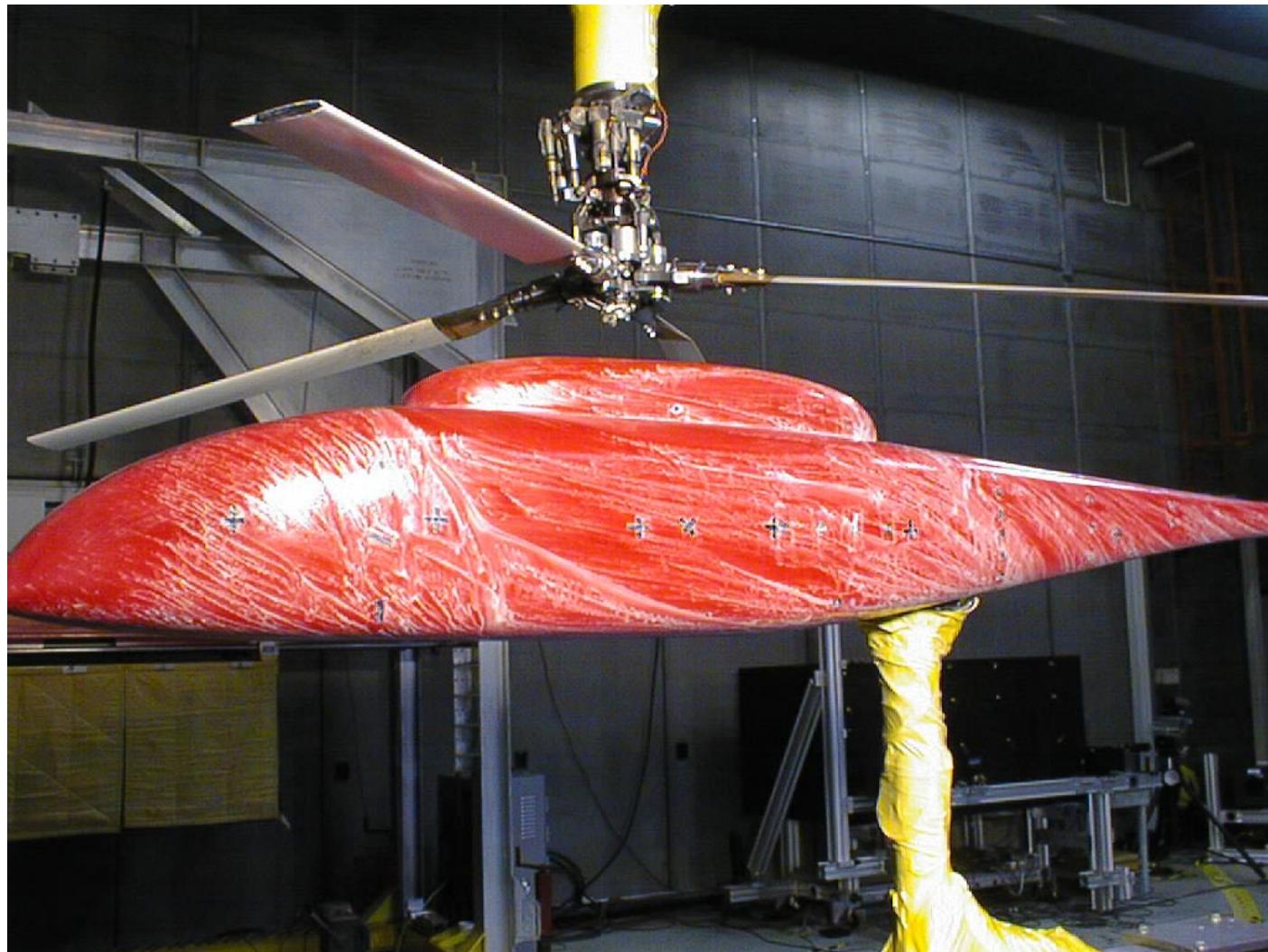
(b) Port side.

Figure 14. Concluded.
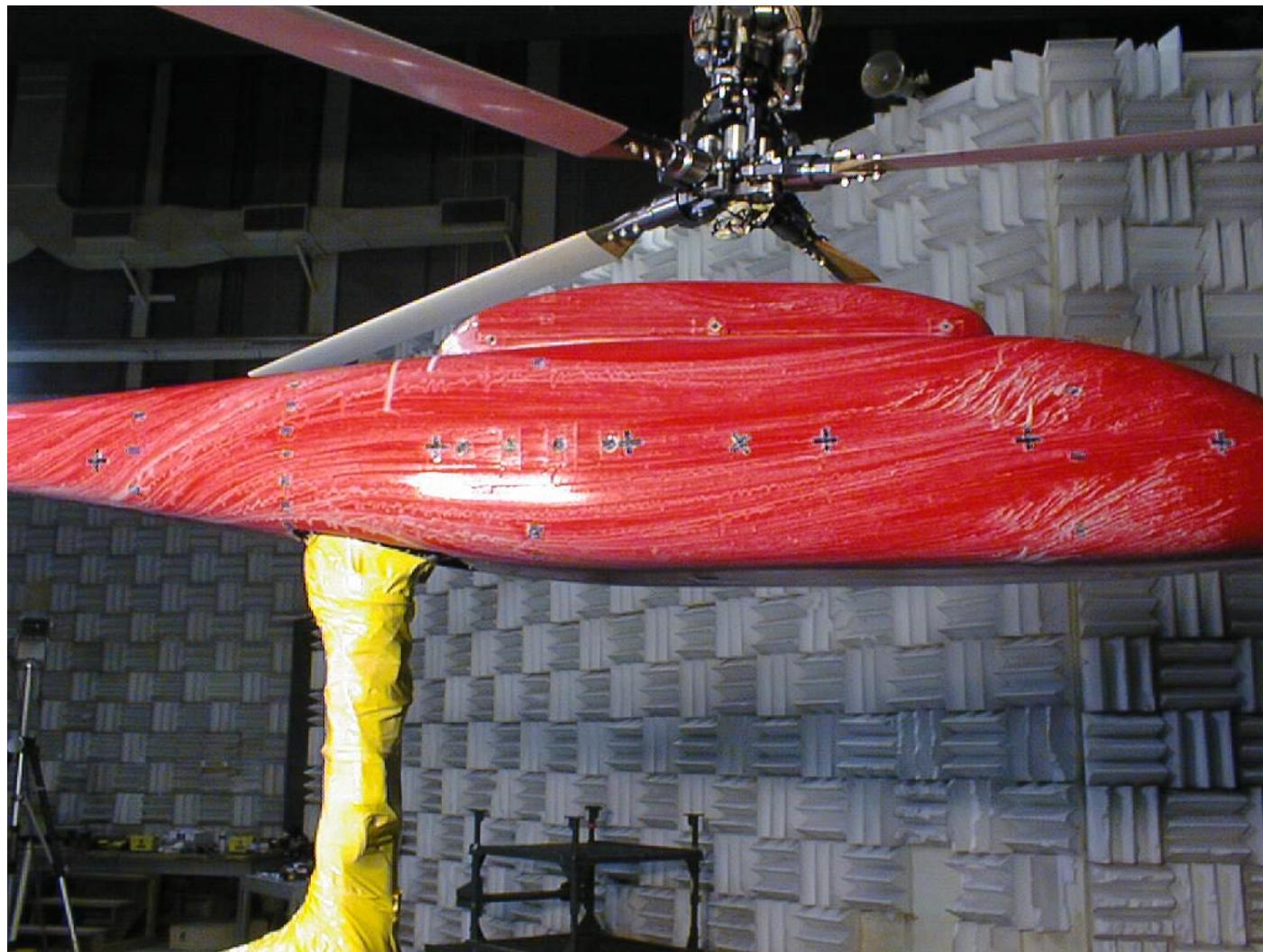
(a) Starboard side.

Figure 15. Surface flow visualization photographs. $\mu = 0.23$, $\alpha_s = -3.0^o$, $C_T/\sigma = 0.0064$.
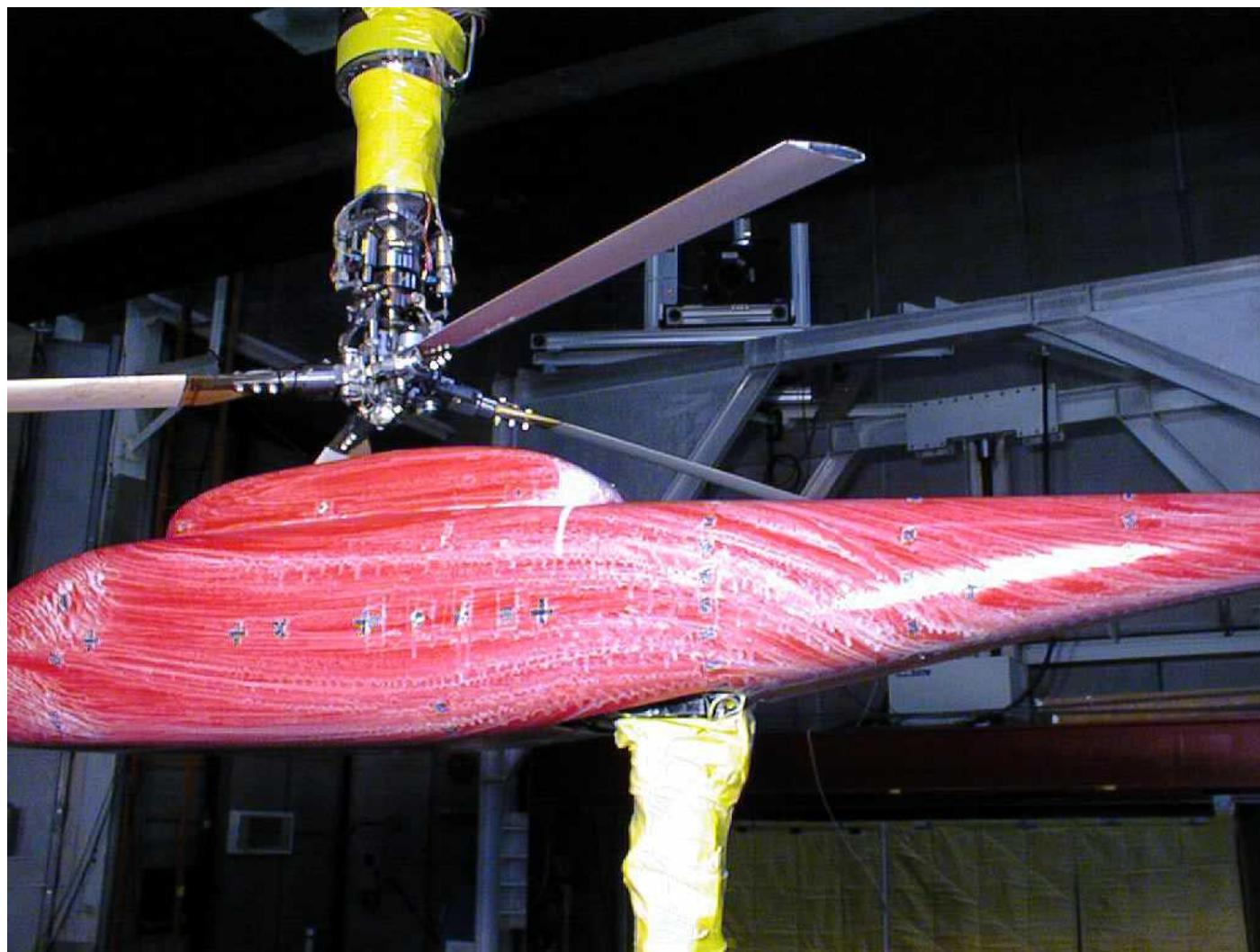
(b) Port side.
Figure 15. Concluded.

REPORT DOCUMENTATION PAGE

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE June 2000	3. REPORT TYPE AND DATES COVERED Technical Memorandum

4. TITLE AND SUBTITLE
Steady and Periodic Pressure Measurements on a Generic Helicopter Fuselage Model in the Presence of a Rotor

5. FUNDING NUMBERS
WU 581-10-11-01

6. AUTHOR(S)
Raymond E. Mineck
Susan Althoff Gorton

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
NASA Langley Research Center
Hampton, VA 23681-2199

8. PERFORMING ORGANIZATION REPORT NUMBER
L-17962

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
National Aeronautics and Space Administration
Washington, DC 20546-0001

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
NASA/TM-2000-210286

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Unclassified–Unlimited
Subject Category 02   Distribution: Standard
Availability: NASA CASI (301) 621-0390

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

A wind tunnel test of a generic helicopter fuselage model with an independently mounted rotor has been conducted to obtain steady and periodic pressure data on the helicopter body. The model was tested at four advance ratios and three thrust coefficients. The periodic unsteady pressure coefficients are marked by four peaks associated with the passage of the four rotor blades. Blade passage effects are largest on the nose and tail boom of the model. The magnitude of the pulse increases with rotor thrust coefficient. Tabular listings of the unsteady pressure data are included to permit independent analysis. A CDrom containing the steady and unsteady pressure data presented in the report is available from the authors.

14. SUBJECT TERMS
ROBIN configuration
unsteady pressure
rotor body interaction

15. NUMBER OF PAGES
188

16. PRICE CODE
A09

17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL